The Mining Journal

RAILWAY AND COMMERCIAL GAZETTE.

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

No. 801.---Vol. XX.] LONDON, SATURDAY, DECEMBER 28, 1850. [Price 6d.

WHIDDEN MINES.

MR. H. C. CREAGH will SELL, BY AUCTION, at the Golden Lion, ASHBURTON, in One Lot, without reserve, on Tuesday, the 7th of January, 1851, at One o'clock P. M. precisely, the SETTS comprising these celebrated TIN and COPPER MINES, with the valuable MACHINERY, including a superior WATER-WHEEL, 40 feet by 4½ feet breast—the MATERIALS, &c.

The leases have about 17 years unexpired; they are held on 1-15th dues, and favourable clauses.

Conditions of sale, &c., may be obtained by application to George Carew, Esq., solicitor, 22, Lincoln's Inn-fields, London; or to Messrs. Caunter, Palk, Creagh, and Co., mineral agents, Ashburton, Devon.

FOR SALE, BY PRIVATE CONTRACT,—A 49-inch cylinder PUMPING ENGINE, 8-feet stroke, equal beam, with new condensing work, and boiler of 10 tons.—Price £680.

A 35-inch cylinder PUMPING ENGINE, 9-feet stroke in the cylinder, and 8-feet in the shaft, with boiler, &c., 10 tons.—Price £550.

Also, a 20-inch cylinder PUMPING ENGINE, of 4-feet stroke, equal beam, suitable for proving a small mine.—Price £100.

For further particulars apply to Capt. Evans, jun., Pool, Cornwall.

TO COAL AND IRONMASTERS.—SALE BY PRIVATE TREATY.—VALUABLE INVESTMENT.—The PENRHOS COLLIERY, near WREXHAM, adjoining the Brymbo works, and dried by the Brymbo workings, with a siding within one quarter of a mile of the colliery, on the mineral branch of the Shrewsbury and Chester Railway.

TO BE SOLD, BY PRIVATE TREATY, ONE-THIRD PART, or SHARE, in the PENRHOS COLLIERY, situate near BRYMBO, in the parish of WREXHAM, and county of DENBIGH: the coal from which has a decided preference, on account of its strength and purity of its quality. This mine is bounded on the north and east by the Brymbo workings (by which it is dried); on the south by the Vron Colliery, and on the west by Plas Mosyn Estate; it is in complete working order, with a powerful high-pressure steam-engine (16-inch cylinder), nearly new, with winding apparatus complete; lifting pumps for feeding out of a reservoir in a freestone rock; recently-erected machine, house and office, weighing machine, smithy, smiths' tools, waggons, pyches, &c.

This colliery is within a few yards of the Wrexham and Ruthin roads, and has already established good Welsh and English sales for cash.

For particulars apply to Mr. James Edisbury, Bersham, Wrexham; or to Mr. William Griffiths, Penrhos, who will show the works.

EAST EDMONDSLEY COLLIERY.—TO BE SOLD, OR LET, the CURRENT-GOING COLLIERY of EAST EDMONDSLEY, in the county of DURHAM, containing 174 acres, or thereabouts, held under leases, of which about 30 years are unexpired. The coal has been sold in the markets as "Gibson's Wall's-End" and "North Durham Wall's-End." The purchaser or lessee will be required to take the engines, &c., at a valuation, which will be of small amount.

For further particulars apply to Mr. William Barkus, viewer, Lowfell, Gateshead.

TO BE LET, OR SOLD, about SEVENTY-FOUR ACRES, statute measure, of valuable FREEHOLD COAL, comprising TWO BEDS, respectively 3 feet and 18 inches thick, situate in the north-east manufacturing district of LANCASHIRE, and within reach of a railway station by 1½ mile of ready-made roads.

There are excellent stone quarries contiguous to the estate.

If needed, a comfortable MANSION, suitable for a highly respectable family, with excellent STABLING and COACH-HOUSE, together with SIX or SEVEN ACRES of superior MEADOW and PASTURE LAND, may be rented with the above.

Applications to be addressed to J. Tolson White, mining engineer, Wakefield, from whom further particulars may be obtained.

Wakefield, Dec., 1850.

VALUABLE MINERALS IN AYRSHIRE TO BE LET.—The COAL, IRONSTONE, LIMESTONE, and FIRE-CLAY in the ESTATE of GROUGAR, containing upwards of 2007 acres Scotch, or thereby, near the town of KILMARNOCK. The COAL has been partially proved by a bore at the dip of the field, and the seams cut are seven in number, as follows:—

No.	Feet.	Inches.	No.	Feet.	Inches.
1	3	5	5	3	0
2	5	6	6	3	0
3	6	0	7	6	8
4	5	0		—	—
Total				32 feet	9 inches

of coal in a bore 57 fathoms deep.

The lowest seam, which is of very superior quality, is the only one of the above-noted coals that has been worked, and it was only worked in a shallow pit near the outcrop.

The IRONSTONES, which are of excellent quality, and most abundant, are of the clay-band kind. They are grouped, so as to be worked by mining; and a considerable working of them may also be made *open cast*, and along with the lime working.

LIMESTONES, &c., similar to those above and below the Black-band Ironstone, worked at Kilbirnie and elsewhere, crop out on this estate, and there is every reason to believe that a large extent of BLACK-BAND IRONSTONE will be found in it, and reasonable time will be allowed to prove by boring, searching, or otherwise.

LIMESTONE abounds in the property in *posts*, differing in thickness 6 feet and under, and extensive workings could be carried on a long time in these seams at little or no outlay, from the fact of the different seams cropping out on the grounds.

This MINERAL FIELD is now favourably situated as regards railway communication, the Galston and Newmilns Branch being within a mile of it, so that these minerals may be (most profitably) manufactured on the estate, or conveyed by railway to the coast, and into the different iron-works of Ayr and Lanarkshire.

For particulars apply to C. D. Gairdner, or Robert Gairdner, bankers, Kilmarnock; or Alexander and Moore, mining engineers, 24, St. Vincent-place, Glasgow.

December 28, 1850.

LANARKSHIRE.

VALUABLE COAL-FIELDS TO LET in the WISHAW ESTATE, near the junction of the Caledonian and Clydesdale Railway, within 14 miles of Glasgow, 5 miles of the great iron-works situated in the district of Coatbridge, and 1½ mile from the large malleable iron-work lately erected at Motherwell.

These coal-fields will be let for a term of years, in allotments averaging from 70 to 120 imperial acres each. Those now to be let consist of the four upper seams of excellent coal, which give a total thickness of about 23 feet, and the whole are workable at a very moderate depth from the surface.

For particulars apply to Mr. Donald Lindsey, accountant, 57, George-street, Edinburgh; Messrs. Dundas and Wilson, C.S., 16, St. Andrew-square, Edinburgh; or to Mr. James Miller, Wishaw, by Motherwell, who will show plans and measurements of the areas of the different lots, and also sections of the going coal-works in the same estate, and marching with those allotments and divisions now to be let.

NAP DOWN CONSOLS SILVER-LEAD MINING COMPANY,—COMBMARTIN, NORTH DEVON.

OFFICES—No. 80, OLD BROAD-STREET, LONDON.

In 3000 shares, of £2 each.—Deposit £1.

CONDUCTED ON THE COST-BOOK SYSTEM.

Bankers—Messrs. Masterman and Co., Lombard-street, London; and the National Provincial Bank of England, Barnstaple.

Secretary—Mr. James Lane, No. 80, Old Broad-street.

The following are some of the advantages under which this Company will commence operations:—

1. The lodes have been laid open to such an extent, that returns may soon be made.

2. The works are in progress of clearing, and a splendid new combined cylinder steam-pumping engine, built by Sims, of 100-horse power, with an entire set of pumps, are ready for work.

3. Labour is plentiful and coals cheap, and there are smelting-works in full operation close to the mine.

This Company may be fairly stated as one of the finest opportunities ever presented to the notice of the public for engaging in a highly profitable undertaking, at a very moderate expenditure. An extraordinary and important discovery has recently been made by shoding on the back of the main lode—nearly 2 tons of silver-lead have been raised in blocks of from 1 to 6 cwts. each. The lode, at this depth, carries a fine gossan, rich in silver; and in the captain's report of the 25th November last, he says—"On Saturday last several pieces of solid ore were discovered in ground that has never been explored—the largest piece weighing 364 lbs., and is an exceedingly splendid specimen."

In addition to the rich deposit of lead and silver with which the mine is stored, there is likewise a copper lode, of a promising description, from 3 to 3½ feet wide.

Applications for shares to be made to Mr. Thos. Allsop, stock and sharebroker, No. 1, Royal Exchange-buildings, London; Mr. James Lane, secretary, at the offices of the Company; and William Thorne, Esq., Barnstaple, Devon—to whom all communications may be addressed, and of whom prospectuses and plans may be obtained.

STIRLING'S PATENT YELLOW METALS—Adapted for SHEATHING, BOLT STAVES, BOLT NAILS, DECK NAILS, as reported by the late Mr. Owen, Supervisor of Metals to the Admiralty; also for PROPELLERS, FRAMEWORK SCREWS, PISTONS, CYLINDERS, COCKS (particularly where there is exposure to corrosion), RAILWAY CARRIAGE AXLE BEARINGS, and for all machinery subject to friction.

Price per lb. in castings ..... 9*d.*
Ditto in forgings and rollings ..... 8½*d.*

AGENTS.

Messrs. GARDEN & MACANDREW, 34, Dowgate-hill, London.
Messrs. JOHNSON, 166, Buchanan-street, Glasgow.

Applications for licenses and other information to be addressed to the undersigned, at Garden and Macandrew's, No. 34, Dowgate-hill. ALFRED BARRETT, Manager.

MR. JAMES CROFTS tenders his SERVICES to CAPITALISTS for the PURCHASE of BRITISH MINING SHARES, whether on a large or small scale; and will be happy to indicate such mines as present the greatest chance of permanent dividends, or ultimate success of the workings, either at the request of his correspondents, or in reply to specific inquiries. The utmost punctuality in attending to communications from the country may be relied upon; and by transacting business only for principals, Mr. Crofts hopes to establish an identity of interests between his friends and himself.

Judicious Purchases in Established Dividend Mines will Insure a High Rate of Interest per annum, varying from 15 to 20 per cent.

Mr. Crofts has specially for Sale—

Wheal Fortescue (20 shares)	East Tamar (45 shares)
Hennock (10 shares)	Wheal Harris (20 shares)
Tincroft (10 shares)	Llynmalees (5 shares)
South Tamar (40 shares)	

Mr. Crofts issues a Price Current of Mining Shares twice each week, which may be had on application.

Dated No. 4, King-street, Cheapside, December 27, 1850.

MINING AND GENERAL AGENCY AND AUCTION OFFICES,—52, *THREADNEEDLE-STREET, LONDON.*

Messrs. R. TREDINNICK & CO. beg to inform their Friends, Capitalists, and the Public, that their SALES, BY AUCTION, of MINING, RAILWAY, & OTHER SHARES, take place every WEDNESDAY, at Twelve for One o'clock precisely, at their SALE ROOMS, in the HALL OF COMMERCE—commencing on the 18th inst.

Messrs. TREDINNICK & CO. hope that the arrangements they have made will afford that convenience and advantage to those embarking in mines, railways, &c., so desirable and necessary to ensure the ready and effective purchase and sale, and which the importance and magnitude of such property demands.

SHARES of every description BOUGHT and SOLD ON COMMISSION, and MONETARY MATTERS of every kind NEGOTIATED; Market Value of Shares, Statistical and other Information afforded gratuitously, upon application.

Messrs. T. & Co. offer to the mining world the opportunity of exhibiting in their Public Sale Rooms, Reports, Plans, Sections, and Specimens of Mines and Mineral Districts, whether situate in the United Kingdom, Foreign, or Colonial Possessions, upon forwarding the same, free of expense; as well Plans, Sections, and Valuations of Estates, Houses, and other Property for sale.

They subjoin herewith a List of Mines, situate in the best mining districts of the United Kingdom, to which they especially beg to draw public attention, as offering desirable inducements for investment, many of which pay dividends of 10, 15, 20, and 25 per cent. per annum upon the market value of shares, whilst others, from capital subscribed and expended, are on the eve of paying dividends, but selling at corresponding low prices. The impetus given to British mining by the improved and firm position of the metal markets—the prosperity of the manufacturing districts—the superabundance of money, with the stable condition of the Government and its revenue, added to the success of the country in its various channels—at peace with the whole world, is to them one of the most pleasing and satisfactory character, and they have no doubt but 1851 will prove to England one of the brightest and most successful epochs in its commercial history.

Plans and Sections, together with Reports of Mines in every district, obtained from practical agents at the shortest notice, and upon the most economical terms.

Commission 2½ per cent. on shares under £100, and 1 per cent. on those above.

To prevent disappointment and inconvenience, they respectfully request that shares be entered for sale at auction two days previous to sale; and shares from country correspondents to be forwarded either to Messrs. T. & Co., or to a town agent, two days antecedent to sale. A deposit of 25 per cent. to be paid on all purchases of shares, and the residue within three days thereof.

Conditions of sale, with printed catalogues, may be had on application at Messrs Tredinnick's offices, Hall of Commerce, Threadneedle-street.

Messrs. R. T. & Co. further request that agents and resident shareholders in Cornish and other mines, will forward to their offices, for the inspection of London shareholder in mines the two-monthly statements of accounts, together with other information likely to affect the value of shares; in return for which they will be happy to render them at all times every service in their power, and promote the general success of mining, by diffusing correct and detailed information to the public respecting the position and legitimacy of British mining.

The following is a list of some of the dividend-paying and other mines:—

West Buller	Condurrow	South Tamar
Carn Brea	Cook's Kitchen	Tamar Consols
Seton	East Wheal Frances	The Worthing
Devon Great Consols	East Crinnis & Pembroke	Trefusis
Stray Park	East Wheal Russell	Tremayne
Treviskey and Barrier	East Wheal Crofty	Treleigh Consols
Tincroft	East Wheal Reath	Wellington Mines
South Basset	Gustavus Mines	West Goginan
South Frances	Great Wheal Baddern	West Polgooth
North Basset	Hawk's Point	West Seton
Wheal Reath	Holmbush	West Frances
Levant	Lewis	West Wheal Jewel
South Tolgus	Linares	West Treasury
East Wheal Rose	Pen-y-bank and Erglodd	West Par Consols
North Pool	Pendarves Consols	Wheal Tryphena
Alfred Consols	Peter Tavy and Mary Tavy	Wheal Harriet
Bryn-Arian	Rock Mines	Wheal Margaret
Comfort	St. Aubyn and Grylls	

MR. J. C. NESBIT, F.G.S., F.C.S., CONSULTING AND ANALYTICAL CHEMIST.

LABORATORIES—38, KENNINGTON-LANE, LONDON.

Mr. NESBIT gives PRIVATE INSTRUCTIONS in CHEMICAL ANALYSIS, and may be consulted on subjects connected with the Composition, Working, or Assaying of Minerals.—Analyses of Minerals, Slags, Soils, Manures, &c. &c., performed as usual, on moderate terms.

ASSAYING and ANALYSIS.—ASSAYS and ANALYSES of MINERALS, METALS, SOILS, FURNACE, and all other MANUFACTURING PRODUCTS. INVENTORS and INTENDING PATENTEES assisted in PERFECTING any INVENTION involving an intimate knowledge of chemistry.

INSTRUCTION in all branches of ASSAYING, ANALYSIS, and METALLURGICAL and MANUFACTURING CHEMISTRY.

Communications to be addressed to Mr. Mitchell, 23, Hawley-road, Kentish Town.

CHEMICAL ANALYSIS, &c.—ANALYSIS and ASSAYS, or INVESTIGATIONS of ANY KIND, are UNDERTAKEN at the COLLEGE OF CHEMISTRY, LIVERPOOL.

Professor—Dr. SHERIDAN MUSPRATT, F.R.S.E.
Hon. Assistant—Mr. JOSEPH DANSON, F.C.S.

A list of Fees for Analysis, and for Students Working in the Laboratory, may be obtained by writing to Dr. Muspratt, College of Chemistry, Liverpool.

CRAUFURD HOUSE

CLASSICAL, MATHEMATICAL, & CHEMICAL SCHOOL, *MAIDENHEAD, BERKS.*

In this School it is sought to combine the development of the physical, moral, and intellectual powers with the acquisition of knowledge, and to make the course of study an introduction to the pursuits of life.

Craufurd House, with capacious dormitories, dining, school, and play rooms, was erected four years ago, expressly for educational purposes; and since that time the establishment has been exempted from illness. The situation is elevated, in the vicinity of the Thames, the scenery extended and picturesque, the air bracing, and the grounds comprise 14 acres.

Besides the usual studies of Classical Schools, GERMAN and FRENCH are spoken—the latter language daily, with the assistance of natives, until Four o'clock. Mathematics are taught, theoretically and practically; there are drawing and singing classes. Physical science is pursued progressively, and the recently erected laboratory is devoted to chemical analysis, now so essential to the miner, agriculturist, and manufacturer.

Mr. J. D. M. Pearce, A.M., will be happy to forward prospectuses and references in answer to applications.

UNDER BRITISH AND FOREIGN LETTERS PATENT.

HUTCHISONISED STONE, BRICKS, &c.—TO LAND PROPRIETORS, ENGINEERS, ARCHITECTS, &c.—The SOFTEST STONE, CHALK, GYPSUM, CLAY, SAND, &c., INDURATED AS HARD AS GRANITE—will never vegetate nor disintegrate, being impervious to atmospheric action, &c.

For all Foundations, external and internal Buildings, Docks and Sea Walls, Sewerage, Paving, Decorative and Monumental Works, the HUTCHISONISED MATERIALS are unequalled for durability and low cost.—*(See Testimonials and Prices.)*

PASTEBOARD, SOFT WOOD, and other ABSORBENT MATERIALS, rendered WATERPROOF, and imperishable from weather, vermin, &c.

LICENSES GRANTED ON LIBERAL TERMS.

Apply to Wm. HUTCHISON, Hutchisonised Stone Works, &c., Tunbridge Wells, Kent.

PATENT IMPROVEMENTS IN CHRONOMETERS, WATCHES AND CLOCKS.

E. J. DENT, 82, Strand; 33, Cockspur-street; 34, Royal Exchange (clock tower area), Watch and Clock Maker, BY APPOINTMENT, to the Queen and his Royal Highness Prince Albert, begs to acquaint the public, that the manufacture of his chronometers, watches, and clocks, is secured by three separate patents, respectively granted in 1836, 1840, 1842. Silver lever watches, jewelled in four holes, 6 gs. each; in gold cases, from £3 to £10 extra. Gold horizontal watches, with gold dials, from 8 gs. to 12 gs. each.

DENT'S PATENT DIPLIEDOSCOPE,

or Meridian Instrument, is now ready for delivery.—Pamphlets containing a description and directions for its use 1s. each, but to customers gratis.

SURVEY OF THE TOWN OF DARLINGTON.

TO ENGINEERS AND SURVEYORS.—The DARLINGTON LOCAL BOARD OF HEALTH are desirous of RECEIVING TENDERS for a COMPLETE SURVEY and LEVELS of the TOWN of DARLINGTON, for the purposes of Drainage.

The Tenders will be received on or before Twelve o'clock at noon, on Thursday, the 23d of January, 1851, sealed and addressed "To the Clerk of the Local Board of Health, Darlington," and marked "Tender for Plan."

Detailed particulars will be furnished on application to the Clerk.

By order, JOHN S. PEACOCK, Clerk of the Board.

Darlington, Dec. 19, 1850.

A MANUFACTURER in BELGIUM, who requires annually 100 cwts. of ENGLISH STEEL, suitable for the fabrication of RAMRODS, wishes to enter into CORRESPONDENCE with any HOUSE who would SUPPLY the SAME he, therefore, requests such manufacturer to address a letter to Mr. A. B., Poste Restante à Nessonvaux, Province de Liege, Belgium, with a general list of prices of such steel as are used in England for the above purpose.

NICKEL AND COBALT.—A GENTLEMAN, who has been engaged for the last seven years in Refining Nickel and Cobalt by the Wet Process, is desirous of AN ENGAGEMENT with any PARTY of CAPITAL who may wish to ENTER this TRADE, on which there is ample profit.—Apply, stating real name and address, to "D. R. Y.," Post-office, Birmingham.

AGENCY.—A Gentleman, frequently visiting Monmouthshire and Glamorganshire, and Counties adjacent, is OPEN to ANY BUSINESS really worth the attention of a respectable party.—Address S. Vernon, Esq., Bank, Pontypool.

A YOUNG MAN, who intends going out to Australia, wishes AN ENGAGEMENT with some MINING or OTHER COMPANY, for REFINING or CONCENTRATING COPPER or LEAD ORES. Respectable references can be given.—Apply to "P. S. Q.," Post-office, Birmingham.

TIMBER PRESERVING COMPANY—PAYNE'S, BOTTRELL'S, and MARGARY'S PATENTS.—The OFFICES of the ABOVE COMPANY are REMOVED from Whitehall Wharf, Cannon-row, Westminster, to No. 50, KING WILLIAM-STREET, CITY. By order,

London, Dec. 23, 1850. R. C. DUKE, Secretary.

BODMIN MOOR CONSOLS, and WHEAL TOM, DEER PARK.—Notice is hereby given, that the OFFICES of the above Mines are REMOVED to No. 11, AUSTINFRIARS, CITY, where prospectuses and reports can be had.

11, Austinfriars, City, Dec. 10, 1850. HENRY HORNE, Purser.

KINGSETT AND BEDFORD MINE.—FOR SALE, THIRTEEN SHARES, calls paid, at TWO POUNDS TEN SHILLINGS.—Apply by (pre-paid) letter to "M. M. C.," Mining Office, 2, Winchester-buildings, City.

MINING COMPANY OF WALES.—PROSPECTUSES, containing REPORTS on the MINES and QUARRIES of the COMPANY, Terms and Conditions for its Government, &c., may be had of ST. PIERRE FOLEY, Secretary, to whom letters on the allotment of shares, and on the general business of the Company, are to be addressed.—Offices, 24, Lincoln's Inn-fields, London.

MINING PROPERTY.—BUSINESS transacted in every description of MINING PROPERTY, SHARES BOUGHT and SOLD, ADVICE GIVEN to PARTIES as to INVESTMENT, ADVANCES of MONEY MADE on this DESCRIPTION of PROPERTY, Statistics given on Mines, and the earliest information obtained from the mineral districts.—Apply to DURRANT & CO., Mining Sharebrokers, 88, Lombard-street.

MINING SHARES.—Mr. JOHN CREFT, No. 1, ROYAL EXCHANGE-BUILDINGS, LONDON, OFFERS his SERVICES, ON COMMISSION, to BUY and SELL MINING SHARES, and will select for capitalists those with the greatest chance of success, and take pleasure in furnishing a list of prices, together with all particulars.

MINING OFFICES,—48, THREADNEEDLE-STREET, LONDON.—Messrs. T. FULLER & CO., beg respectfully to inform the public that they are in a position to BUY and SELL SHARES in all the DIVIDEND-PAYING MINES, and have on hand Devon Great Consols, Levant, North Venton, West Caradon, Bedford United, Peter Tavy and Mary Tavy Consols, South Carn Brea, Warleggan Consols, Calstock Consols, Wheal Russell, East Wheal Russell, West Goginan, Wheal Harris, &c. &c.—Mining shares pay from 15 to 30 per cent.

MINING OFFICES, ST. MICHAEL'S CHAMBERS, *ST. MICHAEL'S ALLEY, CORNHILL, LONDON.*

Mr. R. TRIPP, MINING AGENT, has FOR SALE SHARES in most of the best DIVIDEND-PAYING MINES and others, which will pay the purchaser, at present prices, rom 15 to 35 per cent.

MINES.—MOLYNEUX & CO., 6, FINSBURY-PLACE SOUTH, and 6, WEST-STREET, FINSBURY-CIRCUS, have SHARES FOR SALE in DIVIDEND-PAYING and OTHER MINES, which will ensure to capitalists the safest and most unexceptionable investment.—Office hours from Ten to Five o'clock.

MR. W. BIRDSEY, MINING AGENT, begs to acquaint his Friends and the Public, that he has REMOVED to No. 1, ST. MICHAEL'S-ALLEY, CORNHILL, and takes this opportunity to thank them for the favours he has hitherto received. From an extensive experience in MINING PROPERTY, in which he has been engaged upwards of 20 years, Mr. Birdsey flatters himself he will be enabled to give much general information—he having personally visited most of the mines in Cornwall.—Mr. BIRDSEY trusts, by strict attention to the interests of those who may honour him with their confidence, to merit a continuance of their orders.

MR. JOHN DAVIES, MINING SHAREBROKER, *No. 38, TOWER-BUILDINGS, TOWER-GARDEN, LIVERPOOL.*

MR. JOSEPH J. BAKER, METAL BROKER AND GENERAL COMMISSION AGENT, WOLVERHAMPTON.
OFFICES—MARKET-PLACE.

MESSRS. BOXALL & CO., MINING SHARE DEALERS, *5, CROSBY HALL CHAMBERS, BISHOPSGATE-STREET.*

JAMES LANE, MINING SHARE DEALER, *80, OLD BROAD-STREET, LONDON.*

RAILWAY SHARES, CONSOLS, ENGLISH & FOREIGN STOCKS, and MINING SHARES, &c., BOUGHT and SOLD at the CURRENT PRICE of the day, either for Money or the Account.—CASH ADVANCED upon approved RAILWAY SHARES, for given periods, on moderate terms.

COUNTRY AGENCIES UNDERTAKEN.

A daily and hourly list of prices may be seen, and every information given, either for investment or speculation. BROAD & CO.,
No. 9, BELL-YARD, DOCTORS' COMMONS, LONDON.

RAILWAY SHARES—PUBLIC AUCTION.

MESSRS. R. TREDINNICK & CO. beg to inform the public that they intend to SELL, BY PUBLIC AUCTION, every DESCRIPTION of MINING and RAILWAY PROPERTY; and that their NEXT SALE will be HELD on WEDNESDAY, January 1, 1851, at Twelve for One o'clock precisely, at their AUCTION ROOMS, HALL OF COMMERCE, THREADNEEDLE-STREET, LONDON, where catalogues may be obtained the previous day.—Orders for sale are respectfully requested to be sent on or before Monday morning in each week, so that they may be inserted in the catalogues.

Messrs. R. TREDINNICK & CO. beg to OFFER their SERVICES in the PURCHASE or DISPOSAL of SHARES in MINES. With an extensive connection in the several mining districts, they will be happy to acquire and afford every information connected therewith, and which may be at all times obtained on application at their offices.

Hall of Commerce, Dec. 28, 1850.

ANGLO-MEXICAN MINT OFFICE. No. 5, Broad-street-buildings, London, Dec. 26, 1850.—NOTICE.—A SPECIAL GENERAL MEETING of shareholders in this Company will be HELD at the office, as above, on Tuesday, the 7th day of January next, for the purpose of declaring a dividend on the shares of the said Company.—The chair to be taken at One o'clock precisely.

ALFRED GODFREY, Secretary.

ROYAL SANTIAGO MINING COMPANY.—The Directors hereby give Notice, that the HALF-YEARLY GENERAL MEETING of the shareholders will be HELD at the office of the Company on Wednesday, the 8th day of January, 1851, at One o'clock precisely, when the Directors will make their report.

38, Broad-street-buildings, Dec. 21, 1850.

UNITED MEXICAN MINING ASSOCIATION.—Notice is hereby given, that the HALF-YEARLY GENERAL MEETING of proprietors of this Association will be HELD at the office of the Company, No. 5, Finsbury-circus, on Wednesday, 1st the 29th of January next, at One o'clock precisely.

The transfer books will be closed on the evening of the 12th, and re-opened on the 30th of January. By order of a Court of Directors, JOHN MATHER, Sec.

Office, 5, Finsbury-circus, London, Dec. 26, 1850.

Transactions of Scientific Bodies.

MEETINGS DURING THE ENSUING WEEK.

THURSDAY .....Zoological—11, Hanover-square..... 3 P.M.
FRIDAY .....Botanical—20, Bedford-street, Covent-garden ..... 8 P.M.
SATURDAY .....Medical—33, George-street, Hanover-square ..... 8 P.M.
Asiatic—5, New Burlington-street..... 2 P.M.

GEOLOGICAL SOCIETY.

Dec. 18.—Sir CHARLES LYELL (president), in the chair.

The following communications were read:—1. Report on a New Combustible Substance, discovered in Russia.—A combustible substance, named *Pwnzerite*, by M. Bulgarine, has been found in the Silurian formation, between Rana-Pungern and Gross-Pungern, on the road from Dorpat to Narva, in Esthonia, in the form of a yellowish brown laminated layer, speckled with wh very light, and about as hard as coal; it burns freely and brightly, giving off a great quantity of soot. According to M. Petzold, its constituents are—

Organic matter	65·5	Carbonate of lime.....	17·0
Silica	13·6	Carbonate of magnesia.....	0·2
Oxide of iron and alumina ...	2·3	Water	1·2=99·8

It yields much less carburetted hydrogen gas than coal does—the proportion being nearly 1 to 5; and the amount of heat derivable from it is also less than that obtained from coal, but rather greater than that yielded by charcoal.

2. On the Epiolitic Rocks of the Venetian Alps. By Prof. T. A. CATULLO.—Professor Catullo, in describing the "Rosso Ammonitico" so well known as occurring on the southern flank of the Tyrol Alps, and usually regarded as equivalent to the Oxfordian group of the oolitic rocks, considered that it was divisible into two sections. The lower division, termed by the author the "lower epiolitic," is compact in structure, and is referable to the coralline oolite; whilst the upper division, constituting the author's "upper epiolitic" is sandy and schistose, and is regarded by Prof. Catullo as transitional, both in character and situation, between the true Jurassic and the Neocomian formations. The ammonites enumerated as occurring in the lower group were described as being truly oolitic, whilst those of the upper beds were quite distinct from the foregoing, and comprised three Neocomian forms. The distinction of the beds was also, in the author's opinion, evidenced by the other contained fossils; and, in particular, *Terebratula diphya* and its varieties (regarded as distinct species by the author), were stated to have been found both in the upper division and in the overling Neocomian beds.

3. On the Origin of the Mineral Springs of Vichy. By Sir R. I. MURCHISON, V.P.G.S.—The author shows that these far-famed alkaline waters, deriving their high temperature, carbonic acid gas, and saline ingredients from great depths, issue upon a line of fracture parallel to the course of the adjacent River Allier, and in a direction from S.S.E. to N.N.W. Seeing that this direction is also coincident with the major axis of the neighbouring former eruptive rocks, of which he has lately treated, he considers that the fissure at Vichy was produced in one of the most ancient of volcanic epochs, in which central France abounds, or towards the close of the accumulation of the tertiary lacustrine formation of that region. In proof of the high antiquity of the action of the mineral waters which deposited arragonite with tufaceous limestone, Sir Roderick cites the example of the "Rocher des Celestins," composed of finely laminated layers of those substances, which are now vertical, their edges or tops having sustained a large convent, and being partially covered with old drift high above the Allier. It would, therefore, appear that after the deposition from these mineral waters had been in activity for some time, and had accumulated mounds of travertine and arragonite, a fracture took place, which threw up the layers of the "Rocher des Celestins" into a vertical position, truncating them against others that are undulating and horizontal. As the spring of the Celestines, which issues at the foot of these vertical masses, is perfectly cold, and as no springs have been in action for ages on the summits of the hillocks of travertine, on which the ancient bourg of Vichy stands, the author infers that the accumulations were formed long ago, when the thermal principle was more active than at the present day. The existing *hot* springs, which all lie to the north of the more ancient deposit of the Celestins, and of the old town, are situated at lower levels, and are the remains only of more copious evolutions of a former period.

SOUTH AUSTRALIAN COMPANY.

The half-yearly meeting of this company was held at the offices, New Broad-street, yesterday, for receiving the report of the directors.

J. R. TODD, Esq., in the chair.

The MANAGER (Mr. Miller) read the advertisement convening the meeting.

The CHAIRMAN remarked that he was happy to say that the latest accounts, which came down to the 26th Sept., were highly satisfactory.

The MANAGER then read the following—

SUPLEMENTARY REPORT.

In presenting a report of the affairs of the company for the half-year ending the 30th April last in the colony, the directors are happy to state, that the anticipations which they indulged in their last annual report as to the future success of the company and the prosperity of the colony, have been, to a great extent, realised; and though the present report must necessarily be imperfect, owing to the want of those returns from the colony, which can only be made up once a year, yet they feel assured that the plain statement of facts which it contains will be highly satisfactory to the proprietors.

The continued steady improvement of the rent rolls is most gratifying. The rental received for the six months ending 30th April last—

From the town property, amounted to	£1326 16 9
„ port buildings.....	1559 1 10
„ country lands	4383 11 3
And the receipts from wharf and warehouse.....	1600 9 2
Making a total for the half-year of	£8869 19 0

or at the rate per annum of 17,739*l.* 18s., while the total income from the same sources for the year ending 31st October, 1849, was 14,496*l.* 5s. 4d., being an increase at the rate of 3243*l.* 12s. 8d. per annum.

By advices up to the 5th August, additional leases had been granted of country and of town and port lands, increasing the annual rental by 542*l.* 12s., and it may be here observed, that a further addition will shortly be made by many of the leases rising into the second term of seven years at the advanced rents. These last agricultural leases, the directors are happy to inform you, comprise a portion of the mineral special survey, affording a satisfactory proof of the hitherto unproved agricultural value of it. It is also satisfactory to know that a considerable amount of capital has been expended by the tenants in the improvement of the land. In 1849 there were 11,711 acres under tillage, 2366 acres under fallow, and no less than 22,150 acres substantially fenced in. The colonial manager, in a recent letter, states that "in Lynedoch Valley, the sources of the Onkaparinga, and at Willunga, you may ride for many miles in each locality, and see some thousands of pounds expended by the farmers in fences, homesteads, and other permanent improvements."

The rapidly-increasing trade of the colony has called for a great extension of wharf and warehouse accommodation at the port. In order to meet this, and to prevent the depreciation of the company's property, a considerable outlay has been unavoidable, but the increased receipts for rent and wharfage already prove that this expenditure will be amply remunerative. The income from these sources is estimated to amount to about 5000*l.* per annum besides 1000*l.* per annum from the other port property. This necessary outlay has been, in a great measure, provided for by judicious sales of small allotments, at prices generally considerably above the last inventory rates, while, at the same time, the public interest in the present port has been thereby strengthened.

By means of the dredging machine sent out by the directors in June last, the improvements at the harbour will be very much expedited, and a considerable saving effected in the expenditure, while accommodation will be provided at the company's wharfs for vessels of 1000 tons burthen to lie afloat at all states of the tide. It is also in contemplation to erect the proposed new Custom House on a part of the company's property, nearly adjoining the new warehouses—a measure which, if carried out, will tend much to permanently establish the present port, and still further to enhance the value of property there.

A patent slip, sent out many years ago, is also being laid down on a portion of your property at the port, and, it is stated, will very soon be ready to receive ships for repair; a lease of two acres of land has been granted for this purpose.

The result of the sale of this year's clip of wool has proved very satisfactory. The 446 bales received have netted 6033*l.* 5s., showing an increase of 571*l.* 4s. over the amount of last year. There are still 18 bales of the year's clip to arrive, which will, no doubt, realise a still better price. From the advance obtained at the wool sales just closed, and the steady appearance of the market, there is every reason to expect a still more favourable result from the next year's clip. This improvement in prices will, it is hoped, have a beneficial effect in the colony, and tend to further the views of the directors as to the disposal of the flocks. Towards this desirable end, a commencement has been made by the sale of a flock of 500 sheep, whereby the expense of one of the stations will be saved. The amount realised during the half-year from the sales of sheep and those killed for rations was 1326*l.* 11s. 6d., averaging 4s. 7d. each.

The mining operations of the company have been carried on with the utmost regard to economy, and in accordance with the wishes of the shareholders. The expenditure for the six months ending 30th April last, amounted to 2135*l.* 6s. 5d., being a decrease of 751*l.* 8s. 7d., as compared with the preceding half-year. The value of the ore raised during the same period was 1836*l.* 5s., so that the mine has produced ore nearly sufficient to meet the expenditure.

The reports from Captain Remfry continue of a favourable character; although the quantity of ore raised has not increased, the prospects are decidedly improved, both as to the quantity and quality of the ore. In his report for May, he states,—"I have a great deal of ground thrown open at Kanmantoo, and shall be able to throw up a great deal of ore, without laying out much more money for some time." Mr. Giles also, after a visit to the mine, writes,—"I can assure you that there is no property in the colony, except the Burra, where money can be expended with a better prospect of success than at Kanmantoo, several of the lodes were increasing in size as they went down, and the prospect, upon the whole, seemed to me very encouraging." He adds, in another letter, dated April last,—"I am very anxious to prosecute our researches at Kanmantoo, say for 12 months longer, as by that time Capt. Remfry will have explored by the cross-cut the large iron lode at the top of the hill, expected to make copper to an immense extent, and I think I may say, without presumption, that we can continue these operations and raise enough ore to pay all expenses."

It has always been, and still is, the anxious wish of the directors to grant leases of small sets of the mineral lands, rather than work the minerals for account of the company; but, to do this effectually, and on favourable terms, they are of opinion it is important to continue the mining operations at Kanmantoo for some time longer, that they may be in a position to develope the wealth of the property. One sett of 80 acres has been recently [illegible] parties, who appear to have been most successful in [illegible] and have formed a company for working this mine, under the name of [illegible]

[illegible] Despatcher, dated 26th of September, have been received from the colonial manager [illegible] the last few days, containing accounts from the mine of a still more favourable character. The quantity of ore raised during the month of August was nearly double that of the previous month, and of a superior quality, its value, also, exceeding the expenditure of the month by 102*l.* Fresh discoveries of ore (blue and green carbonates) have been made on five different lodes, exclusive of immense iron hills. Agreements to lease two additional setts of 100 acres each have also been nearly completed on favourable terms, and Mr. Giles, in conclusion, maintains his opinion of the very great value of the mineral survey.

It must be gratifying to the proprietors to learn that the colony, with which their interests are so closely identified, is steadily advancing in prosperity. This is manifest in its extended commerce, the successful development of its mineral wealth, and the improving state of its agriculture; and it is to be hoped, that under the new constitution recently granted to it, this prosperity will be still further promoted.

The directors advert to the recent measures of the Colonial Government for encouraging the navigation by steam of the River Murray, and the formation of a railway from the Goolwa to Port Elliott, as evincing a laudable desire still further to open up the resources of the colony. It appears, however, that a numerous and respectable body of the colonists decidedly object to the carrying forward these measures at a time when other important works of more immediate advantage to trade are retarded for want of due encouragement.

It is with regret the directors observe that the projected railway between Adelaide and the Port is still in abeyance, but they earnestly hope that this important undertaking will, ere long, be commenced and carried forward with spirit.

Emigration has steadily progressed during the past year, and the funds applicable to it are amply sufficient for its continuance. The demand for mining and agricultural labour, at a remunerative rate of wages, continues unabated.

In conclusion, the directors would assure you of their continued attention to your interests, and their unabated confidence in the future prosperity of the company.

The CHAIRMAN, in moving the adoption of the report, said he should be happy to give any further information if it were required.

Mr. PATERSON asked in what state the railway was?—The CHAIRMAN replied that, in consequence of various conflicting interests, the railway had been stopped, and the Governor had written home to know what was to be done in the matter.

Mr. DIVETT, M.P., said the company did not consider the terms offered in the Act of Council such as they could carry out a railway, so as to make it remunerative. This company, fearing something might be done hostile to their interest, thought it advisable to take a few shares, so as to have a voice in the concern.

The Rev. THOMAS TIMPSON asked if the Government had taken land of this company, on which to build a Custom House?—The CHAIRMAN said he understood the Government were going to build it upon the company's land.

Mr. DIVETT, M.P., observed that it was under this expectation that the directors sent out the dredging-machine, to deepen the part opposite the company's wharfs.

Mr. PATERSON asked if 1836*l.* was the amount received from the mining operations?—The CHAIRMAN said that part had only been realised; 22½ tons of copper had come to this country. The company had received altogether from the mines 12,758*l.*

The Rev. T. TIMPSON was very glad of it, and hoped they would gradually diminish their mining operations by transferring their mines to others.

The CHAIRMAN said, the money expended had given an increased value to their mines; and the last report stated that there was an actual profit on the working. (Hear.)

Mr. DIVETT, M.P., observed that the directors now only opened the property with the view to induce others to take the setts, and alluded with satisfaction to the 100 acres so disposed of at Kanmantoo.

The CHAIRMAN said, that in addition to selling the setts, the surface rents would give a moderate return.

Mr. BROWN also advised the sale of the mineral lands; and that they should by no means be tempted to become a mining company. (Hear.)

Mr. PATERSON observed, that he had heard from some Yorkshiremen that their wool was very bad in quality, and so greasy that it fetched only a very indifferent price.

The CHAIRMAN replied, that the nature of the water, and other causes, hindered them getting up the wool properly; but he had always understood that the quality of their wool was good, and fetched a very fair price. (Hear.)

A PROPRIETOR said, it was 15*l.*, and that was not very unfavourable.

The CHAIRMAN then moved the adoption of the report, and that it be circulated amongst the proprietors.—The Rev. T. TIMPSON seconded the motion, which was agreed to unanimously.

The CHAIRMAN stated, that all their land might be taken at 57,000 acres—of which they had of country land unproductive, 7611 acres; of mineral lands, 11,500; of port lands, 367; and of town acres, 182—being a total of 19,660 unproductive out of 57,000 acres, the remainder being leased, or in the way of improvement. The directors were not very anxious to sell their lands at present, seeing the daily increase of their value; and if they had done it in some few cases, it had only been for the purpose of improving other property. (Hear.) They had sold a piece of 2000 acres; and the outlay of that money went for improvements in building a wharf and warehouse, which let so as to realise a very high rate of interest for the money so expended. (Hear, hear.) As all their capital was paid up, they had no means of meeting the annual expenditure, except they could take it now and then in this way from the income. This made it a subject for consideration whether they ought not to increase their capital, rather than sell their property when times were so improving. Their income was now such as would give 5 per cent., and probably 6, by the next meeting; but the directors would not propose to extend it to that amount, unless it could be done permanently. (Hear, hear.)

Mr. WATSON hoped they would not borrow money.

Mr. DIVETT, M.P., said it would be raised by the issue of new shares at par.

Mr. WATSON said the best thing for the directors would be to convert further money into land, seeing it was so improving. (Hear, hear.)

Mr. BROWN understood a larger dividend might have been divided amongst the shareholders on this occasion, had the money not been profitably invested.

The CHAIRMAN observed that such was really the case.

Mr. BROWN asked when the inventories were made out?—Mr. DIVETT, M.P., said they were made up in the colony previous to the annual meeting.

Mr. WHITE knew from parties, that land which this company bought at 1*l.* was worth 6*l.* an acre.

After some further observations, Mr. WHITE moved a vote of thanks to the chairman and directors, which was seconded by Mr. OAKES, and was passed unanimously.

MEXICAN BONDHOLDERS.

A general meeting of Mexican bondholders took place at the London Tavern, on Monday, and was very numerously attended.

Mr. CAPEL moved that the Baron de Goldsmid take the chair, which was agreed to amidst loud acclamations.

The BARON DE GOLDSMID said—Gentlemen, I shall have very little to trouble you with, as any observations of mine will be embraced in the report which will now be submitted, for your consideration. You will have to look at it calmly and deliberately, and to decide whether you will accept the terms that have been proposed by the Mexican Government. If you object to these, you will have to consider whether or not you have the power of obtaining better terms. You must also ask yourselves at the same time whether the Mexican Government have the ability to give you at this moment any better terms. It will be to their interest at a future period, no doubt, to give you them, but the committee cannot give them; you can only obtain that by one course, and that is by giving the Government once more your confidence. They may have on some occasion to ask again for our assistance, in order to develope their resources and protect themselves from a common enemy. Before then it will be for their consideration, and as their prosperity increases, to see whether we are not entitled to some further remuneration. In conclusion, I trust you will honour the committee by adopting the terms we are now about to recommend, in the hope that the Mexican Government will do something better for us at a future period; and with that object in view, I shall call on my honourable friend to read the report for your consideration.

Mr. CAPEL having read the report, the CHAIRMAN said he would now submit the resolutions which the committee had agreed to unanimously. [The resolutions for the settlement of the interest and arrears of the debt are to be seen in our advertising columns.]

A BONDHOLDER asked what guarantee there was for the payment of this interest.—The CHAIRMAN replied that they must rely on the honour of the Mexican Government.—A BONDHOLDER asked what confidence they could have, when Messrs. Manning and Macintosh had failed for a quarter of a million of dollars.—Mr. CAPEL: We have a well-grounded hope that this money will be received ultimately, and without loss.

Mr. RICHMOND said, that in case of these new terms not being kept, they could but go back to the same position as they stood in at present.

Mr. WALTER observed that would be simply saying, that if they did not get 3 per cent., they should at once fall back on their right to get 5 per cent.

The CHAIRMAN: Our advice is, to accept the terms proposed; if we can get you anything beyond, we will. (Applause.)

A BONDHOLDER would suppose they failed in a sufficient revenue to send over this dividend?—Mr. RICHMOND could say, as one of the committee who had given great attention to the subject, that there was no likelihood of any decrease of the Mexican duties, so as to make them inadequate to the payment of a 3 per cent dividend. The worthy bondholder alluded to certain facts as the grounds of this anticipation, which were, first, the abolition or reduction of cases of prohibition or high duties to a system of low duties, thereby preventing smuggling; secondly, the annihilation of that army which kept the people *in terrorem*, and hindered the development of Mexican resources; and, thirdly, that during the stay of the Americans, immense quantities of the staple articles of consumption were thrown into the country without the payment of any duties whatever. He had made himself so practically acquainted with the Mexican resources, that he could easily bring his mind to look for the result he had just mentioned. The committee, taking the same views, recommended the adoption of the decree now produced. He thought it right to give the reasons which induced himself and them to come to such a conclusion. (Hear, hear.)

Mr. ROBINSON thought they should not part with their Five per Cent. Bonds, without good security for this new dividend being regularly paid.

Mr. RICHMOND said the estimate of the Finance Minister calculated on a revenue of $ 11,919,000. From this must be taken about $ 2,000,000 for the defence of some of the territorial states—leaving about $ 9,000,000. About this realisation of $ 11,000,000 he thought there was no difficulty; so that there would be ample security for the payment of the terms the Minister proposed of 3 per cent. upon the external and internal debt.

A BONDHOLDER observed that he was a possessor of the unconverted deferred bonds to the extent of 100,000*l.*, and he hoped he should be put in the same position as the other bondholders.

Mr. MORIARTY wished the meeting to confine itself to the adoption or rejection of the resolutions. Any question regarding these deferred bonds should be impressed upon the Mexican Government in a separate way. (Hear.)

Mr. CAPEL said although he represented 500,000*l.* Mexican bonds, very little of which was his own, still if the whole belonged to him, he would agree to the terms now proposed.

Mr. DOVER asked if they were converted bonds?—Mr. CAPEL: Yes.

The CHAIRMAN, in reply to a bondholder, said the trustees did not want to keep back the money now standing in the names of himself and the other trustees; their object would be to distribute the 300,000*l.* now in the bank, and for which he, Mr. Capel, and the committee had given a bond of indemnity as quickly as possible.

A BONDHOLDER said he understood the reason they had not received this before was, that Messrs. Schneider had commenced a suit in Chancery.

Mr. CAPEL observed that they wanted to get rid of this money to prevent themselves getting into Chancery.

Mr. RICHMOND said that Colonel Facio had declined to give his assent to any division of the funds in the Bank of England till the question now before the meeting was disposed of. He saw no difficulty about the money being divided in a fortnight, if these new terms were agreed to.

The CHAIRMAN expressed an equal desire with Mr. Richmond to give up the money to the bondholders, but certain forms must be gone through, and he should be sorry to pledge himself to so early a day as that mentioned. As soon as all obstacles were removed, the fact would be announced to the bondholders, and the money would be divided.

Mr. CAPEL also expressed a wish to divide the money the very moment it was possible; but he would not consent to borrow money to pay a dividend.

Mr. RICHMOND said 2 per cent. could be paid without borrowing. (Hear, hear.)

The various resolutions having been passed—a motion was proposed by Mr. DOVER, and seconded by Mr. SILLEM, that the holders of unconverted deferred bonds should share equally with the holders of consolidated Mexican stock.

The CHAIRMAN put the resolution to the vote, but it was negatived.

A resolution was then passed unanimously, for giving the committee power to divide the present money of the bondholders in England, and any further sums that may be received for that purpose.

The CHAIRMAN said the committee would urge that justice be done to all the bondholders, and that the case of the deferred bonds would not fail to be represented to the Mexican Government.

A resolution was passed, amidst loud acclamation, to Lord Palmerston, for his conduct in supporting the cause of the bondholders.

Mr. RHODES moved a vote of thanks to the chairman, which was seconded and agreed to by acclamation.—The meeting then separated.

New Patents.

SPECIFICATIONS ENROLLED DURING THE PAST WEEK.

W. E. NEWTON, C.E., Chancery-lane, civil engineer: For certain improvements in the construction of railways. The patentee claims—1. A peculiar form and construction of cast-iron sleeper or bearing-plate (peculiar only in so far as regards the arrangement of feathers or strengthening pieces, and the casting of each sleeper independent of the opposite one), having a chair cast upon it, one jaw of which is divided into two parts, to allow of the two rails being held and fastened thereto in a more secure and effectual manner than by the ordinary methods, so that in the event of one rail requiring to be removed, this operation may be effected without interfering with the other. This mode of construction is claimed, whether it be applied to bearing plates of the form above mentioned, or to those of the ordinary description.—2. Connecting opposite bearing plates together by means of transverse bars or tie rods, the ends of which, by taking into holes or sockets formed in the sleepers, securely hold the same together, without the aid of any other fastenings.

R. HEATH, Manchester, iron merchant, and R. H. THOMAS, of Woolstanton, engineer; For certain improvements in the manufacture of iron. The patentees claim the use of revolving cylindrical surfaces or rollers, moving in the same direction, but at different rates of speed, for the purpose of converting a puddle ball of iron into a bloom. The peculiar motion given to the rollers causes the metal to revolve round its own centre, whilst at the same time it is gradually carried downwards and discharged at the bottom of the machine. The scales of metal which fall during the operation pass through a grating into a suitable receptacle underneath, and can be removed in the ordinary manner.

S. ELLIS, engineer, Salford: For improvements in machinery or apparatus applicable to carriages used on railways. The "machinery or apparatus" referred to consists of an additional set of wheels, so arranged as to admit of the carriage being moved from one line to another, at any point where a transverse line of suitable gauge intersects the main line. A crank, worked by a worm and worm-wheel, or a rack and pinion, serves to raise the ordinary running wheels, at the same time that it brings the transverse ones to bear. When the carriage has been moved, the reverse motion of the crank raises the transverse wheels, and throws the weight of the carriage back on the running wheels, which are by this time in their desired position on the second line or siding.

Claim.—The constructing and arranging of apparatus, and adapting the same to carriages on railways, in such manner that when the wheels for traversing the carriage from one line of rails to another are brought to bear on the transverse rails, the ordinary running wheels will be taken off their bearing on the line of rails, and when the wheels for traversing the carriage from one line of rails to another are taken off their bearing on the transverse rails, the ordinary running wheels will be brought to bear on the lines of rails.

R. WADDELL, engineer, Liverpool: For certain improvements in steam-engines. The objects of the present improvements are—1. To provide an outlet or means of escape for any water that may have accumulated either in the cylinder or steam-pipe, from the priming of the boiler, from condensation, or from any other cause; and—2. To regulate the velocity of the engine when, from the withdrawal of resistance, the steam possesses an unequal elastic force, and exerts an undue pressure in different parts of the steam-pipe, its condition being then what is termed "wire-drawn." Mr. Waddell describes two arrangements of apparatus calculated to overcome the first of these difficulties; the principle is, however, in both cases the same. The cylinder, or steam-pipe, has attached to it a chamber provided with two valves, which are maintained in equilibrio against the pressure of steam inside by the atmospheric air, aided by a counter weight. The accumulation of water in the chamber destroys this equilibrium, which is, however, again restored after it has escaped. In the second case, an additional throttle valve is employed, which is brought into action when the equilibrium of a piston placed in a chamber attached to the steam-pipe is destroyed, by the steam on one side possessing a greater elastic force than that on the other. This additional valve is equally applicable to engines in which the throttle valve is worked by the governor or by hand gear, as is the case in marine engines.

Claims.—1. The use of a valve or valves acting (for the purpose mentioned) by the gravity of the water they are intended to discharge.—2. The application to steam-engines of an additional throttle valve, capable of being brought into action by a difference in the elastic force of the steam existing at the same time in the steam-pipe.

LIST OF PATENTS GRANTED DURING THE PAST WEEK.

R. Rodham, of Gateshead, Durham, practical chemist, and E. R. Hoblyn, of Stepney, Middlesex, gentleman, for improvements in machinery and apparatus for condensing and purifying smoke, gases, and other noxious vapours arising from fire-places and furnaces, or from chemical and other works, and in rendering the products resulting from such condensation and purification available for the manufacture of various colours.

E. Dunn, of New York, but now residing at the London Coffee House, Ludgate Hill, London, master mariner, for an improved engine for producing motive-power by the dilatation or expansion of certain fluids or gases, caused by the application of caloric.

W. H. Gratrix, of Salford, Lancaster, engineer, for certain improvements in the method of producing or manufacturing velvets, or other piled fabrics.

DESIGNS FOR ARTICLES OF UTILITY REGISTERED.

G. Twigg, Birmingham, slide for dress pin.
I. Smith, Uxbridge, feed regulator for mills.
Dent, Allcroft, and Co., Wood-street, Cheapside, glove fastener.
J. Capper and Son, Gracechurch-street, folding bassinette or cradle.
H. A. Holder, Birmingham, tricolour hand signal lamp.
Robinson and Co., Mount-street, carriage lock or wheel plate.
G. Bolton, Borough, dress or shawl fastener.
Dobson and Medcalf, Lancaster, coupling for sheet metal rollers.
W. Richards, Birmingham, guard for carving fork.
Cottam and Hallen, Oxford-street, fitting for stables.
E. Shirwood, Birmingham, show box for jewellery.
D. S. Brown, Old Kent-road, universal barometer.—*Mechanics' Magazine.*

IMPROVEMENTS IN ROTARY ENGINES.—Mr. Newton, C.E., Chancery-lane, has patented some improvements which consist in packing the ends of the steam-wheel or piston and the cylinder-head of rotary engines with a metallic ring at each end fitted to the face of the steam wheel, and adapted so as to slide in an annular groove in the cylinder-head, or end of the casing which incloses the steam-wheel. The packing ring is connected with a series of segmental wedges interposed between it and the cylinder head. Each of the wedges is adapted to slide radially, and is coupled with a screw shaft or spindle, which is free to slide endwise in a pinion, the series of pinions being so arranged as to be simultaneously turned in either direction by a cog-wheel on the main shaft of the engine. The cog-wheel is actuated by means of a worm or thread, or its mechanical equivalent, on the shaft of a hand-wheel, so that by turning the latter, the series of segmental wedges may be drawn towards or caused to recede from the centre, and will thus by their peculiar form press the packing towards the face of the steam wheel or release it from such pressure. This method of arranging the packing is applicable to all kinds of rotary engines, and possesses the advantage of being entirely under the control of the engineer during the working of the engine, or before starting; so that in the event of any inequality existing in the expansion of the various parts of the engine, the readiness with which the packing can be adjusted offers every facility for avoiding the extremes of too great binding or too much leakage.—*Claim:* The method, substantially as described, of regulating the packing-ring interposed between the steam-wheel and head of the cylinder, or outer casing of rotary engines, by combining with the said packing-ring a series of segmental wedges, operated simultaneously in manner substantially as described.

THE CHRISTMAS RAILWAY TRAFFIC.—On the London and North-Western, during the four days preceding Christmas-day, the number of parcels and packages sent "outward" by the mail and ordinary trains was little short of 25,000, and "inward" of 10,000. Nearly 5000 parcels went down the line on Monday. By the Great Western Railway there were 15,000 parcels outward, and 10,000 inward bound. By the Great Northern Railway, "in and out," there were about 10,000, exclusive of goods' trains, as was the case on the Eastern Counties Railway of corn, meat, &c., from the agricultural districts. The London and South-Western, South-Eastern, and Brighton Railway Companies had a larger complement than usual of Christmas traffic.

WONDERFUL CURES DAILY EFFECTED BY HOLLOWAY'S OINTMENT AND PILLS, OF BAD LEGS AND OLD WOUNDS.—If these valuable medicines are used according to the directions given with them, there is no wound, bad leg, or ulcerous sore, however obstinate, or of long standing, but will yield to their curative properties. Numbers of persons who have been patients in the large hospitals, and under the care of eminent surgeons without deriving the least benefit, have been cured by Holloway's ointment and pills when every other remedy had failed. For glandular swellings, tumours, scrofula, scurvy, and diseases of the skin, there is no medicine that can be used with so good an effect.—Sold by all druggists, and at Professor Holloway's establishment, 244, Strand.

ON ELECTRO-MAGNETISM AS A MOTIVE POWER.

Prof. Page has just furnished a report to the United States Senate, giving an outline of his experiments on the application of electro-magnetism, during the present year, and which were referred to in our Journal of May 5, 1849.

"The first principal experiments were made with a small trial engine, built expressly for the purpose, and with the utmost care with reference to mechanical accuracy. Attached to this was a dynamometer of new construction, and admirably adapted to the purpose. This was invented by my principal engineer, and measured in a most satisfactory manner the dynamic power of the engine at any given velocity—a great desideratum in estimating this new power. With this trial engine, the following important questions were tested:—1. The dynamic values of different qualities of soft iron.—2. The dynamic values of steel, hard and soft—3. The dynamic value of cast-iron. The statical values of all these varieties were tested by a separate apparatus, constructed for the purpose, called the axil galvanometer: 12 varieties in all were tested, and were in bars of uniform size, one foot in length, and one inch in diameter, and it was found that the statical and dynamic properties corresponded.—4. The proportions of the helices were approximately tested; though much remains unsettled yet upon this important point.—5. The advantage of keeping up the magnetism in the axil bar was most satisfactorily tested.—6. Various modes were tried of reversing the motion of the engine, and with success.—7. Various kinds of cut off (which is the most critical and important point in the construction of the engine) were tried.—8. The operation of closed circuits and secondary currents was tested by a number of experiments, requiring great care and accuracy.—9. The best working velocity of this engine, and its absolute power with a given battery, was fully tested.—10. The ratio of the increase of power, with an increase in the quantity of the current.—11. The values of different kinds of metal in forming the cut-off.—12. Various mechanical points of construction, supposed to have been incompatible with the exhibition of this power, were put to a practical test. Various other minor points also were the subject of experiment, which will be communicated hereafter. A second model, of small size and somewhat rude construction, was also made, with a view of testing a new arrangement of the axial bars. Experiments were then commenced upon a larger scale, with a view to determine whether the same proportion of power could be obtained from large as from small engines, this being the principal question in view at the time of the grant of the appropriation.

"With a view to facilitate the construction of helices of large size, a machine, which had long been in contemplation, was made at a considerable expense. The work was done at the Navy-yard in a creditable manner, and the machine performed its work well, turning out entire helices of copper wire, of large size, from straight bars. But before I had proceeded far, a discovery was made in reference to the helix which rendered the machine useless, for the present at least.

"A number of large helices were then constructed of various sizes, and suitable bars of soft iron prepared, corresponding to the helices. Hollow and solid bars were prepared, from two inches to eight inches in diameter, and generally three feet in length. Some bars of four to five feet in length were also prepared. The bars were all worked at the Navy-yard, and at a considerable expense, as they were required to be of homogeneous metal, accurately turned and bored. With these bars and helices a multitude of experiments were performed and recorded, and these were kept up day after day for about two months. My official duties as Examiner in the Patent Office left me only the evening of each day for operation; and, under such circumstances, you will readily appreciate the difficulties and disadvantages under which I have laboured. My own zeal has led me beyond my strength; but I have been richly rewarded by the most flattering results. The experiments here were not such as could be performed upon the laboratory table; but were with large masses of iron, weighing in some cases 300 lbs., and helices sometimes twice that weight.

"Adhering to the same size of battery through a long series of experiments, and varying the coils and bars, I found, to my great gratification, that as I increased the dimensions of each a corresponding increase of power was exhibited, and the consumption of material, or cost of the power, in some proportion diminished. These results were encouraging and stimulating in the highest degree, and fully justified the undertaking at once of an engine upon a much larger scale than any hitherto tried. This engine, the framework of which was principally built at the Navy-yard, was an upright engine of 2-feet stroke; and in order to have facilities for comparative trials and experiments, it was necessary that a double engine should be made, the two parts exactly corresponding. Two bars of soft iron, six inches diameter and three feet in length, were the prime movers, and these were balanced by means of connecting rods and cranks upon a fly-wheel shaft. The balance wheel and shaft together weighed 600 lbs. When this engine was first tried, with the same battery which had before given me one-fifth of a horse power, with a smaller engine, it produced only one-third of a horse-power. By careful attention to the adjustments, and particularly to the cut-off, which was a very different thing now from what it had been in smaller engines, the engine soon yielded one-horse power. Here was a gain of 80 per cent. as measured merely by the size of the battery. But it was much more; for the cost was found to be less for one-horse power than it had been before for one-fifth of a horse power, in a smaller engine; how much less has not yet been ascertained. A great variety of experiments were continued with this engine, to be hereafter detailed, each having a definite object; and, I am happy to say, each resulting advantageously, so that finally, by little daily increments, I obtained from this engine, by a trifling addition of battery, a full two-horse power. By way of giving a practical character to the engine, it was geared to a circular saw 10 inches in diameter, the turning lathe and grindstone of the workshop, all of which it worked simultaneously, as witnessed by a number of visitors, and, if I mistake not, by your predecessor in office, in company with Lieut. Maury, of the National Observatory.

"After many satisfactory trials with this engine it was taken down, and all its available parts used in the construction of the single horizontal engine which I had the honour lately to exhibit before the Smithsonian Institution. This change was made for the purpose of dispensing with the dead weight of one of the driving bars, and more particularly for introducing the important feature of keeping up the magnetism of the driving bar. As soon as this new form was completed and tried, a gain of one-half horse power was at once realised, and by the addition of a few more feet of battery surface, the power was found to be above four horse. Further addition of battery would still augment the power, and I see no reason why 10-horse power might not be obtained from this engine by the addition of more battery; but whether it would be economical to increase power by this alone, and to ascertain the point, for this and every other engine beyond which economy would cease, by increasing the battery alone, are matters to be determined by experiment.

"The next most important point to be determined was the expense of this power. Much to my own surprise and gratification, the expense was found to less than the most expensive steam-engines; although recently, in Europe, it has been decided by experimenters and men of science, and generally conceded, that it was 50 times the cost of the dearest steam-engines. It is still, however, considerably dearer than the cheaper sort of steam-engines; but this is no obstacle to its introduction, considering its immense advantages in other respects. Moreover, if thus much has been done in the very inception of this undertaking, what may we reasonably expect from its further prosecution? Before it can be rendered available in practice much remains to be done with the galvanic battery, to render its action regular and durable, and in other ways to establish a certainty of action, so that the engines may be managed by persons not thoroughly skilled in the subjects of electricity and magnetism.

"It remains yet also to be proved whether the power will increase in proportion to the size of the engines. This principle seems to be strongly indicated by past experiments, but yet it cannot be established by calculation or process of reasoning. Experiment upon an extensive scale can alone determine this point. A part of the work preparatory to building a locomotive engine has been done; but it seems necessary to try further experiments, before incurring the expense of another large engine upon the plan above mentioned. The rotary form of the engine has not yet been tested, although it possesses advantages not to be found in any form of the reciprocating engine. There are some obvious disadvantages attending its construction; but it is hoped that they will be outweighed, more especially as this form of the engine will occupy less than one-half the room required for the reciprocating form.

"It would seem very desirable that the investigation thus begun, and so far successfully conducted, should be carried at least beyond an uncertain issue, and that every important point should be settled, and particularly that of its availability on an extensive scale. The power is peculiarly fitted for purposes of navigation, if it can be made subservient; and a trial upon a scale of 100-horse power seems to be the only mode of arriving at a definite conclusion upon this point. It is obvious that, preliminary to such an undertaking, a great many experiments will be absolutely necessary; and such only as one quite familiar with the difficulties of entering upon an entirely new field of operation can properly appreciate."

MINES AND MINING IN CALIFORNIA.

The following particulars, furnished by the correspondent of the *Daily News*, relative to the mines and mining population of the gold regions, will be found of much interest:—

Moqueborne River, 200 miles from San Francisco, California, Oct. 31, 1850.

From a practical experience of upwards of eight months as a miner and storekeeper in the mines, I am now enabled to give you some details, which I hope may prove of interest, and, at all events, I shall endeavour to make them as useful as possible as a guide to any of my countrymen who may still have an idea of turning their thoughts to mining in California—a life which, although full of novelties, I believe most of your readers will agree is also one of considerable hardship. Stockton, situated on a small branch or arm of the River San Joaquin, and at about 100 miles in an easterly direction from San Francisco, is the depot for all the southern mines, and a truly wonderful place, considering that 18 months ago it was not even in existence; but the gold works wonders, and Stockton now contains upwards of 400 houses, with a population varying from 5000 to 10,000. It can also boast of two daily newspapers, a theatre, and other places of amusement; but, above all, I must notice the post-office, which is most admirably arranged; each merchant has his box on the same system as at Liverpool, and other towns in England. With all this, however, it is a most disagreeable place to live in. Business has been very dull all the summer, and I do not think Stockton is a very rising place; therefore, I shall bid adieu to it, with its dirty dusty streets, and myriads of fleas, and, mounted on a good mule—the usual mode of conveyance—steer in a southerly direction towards the mines, the whole of which are situated at about 70 miles distance.

I am conducting your readers now to a place called Mokelome Hill (an Indian name, I believe), 55 miles from Stockton, and situated about midway between the northern and southern mines—a place which has proved one of the richest in this country, and which will gradually become of some importance.

CLIMATE.

Of the climate it is impossible to speak too highly, and an Englishman above all ought to be contented in this respect; withal that the heat is somewhat too great at times. One uninterrupted summer prevails for upwards of seven months in the year—viz.: from April until the end of October, and not such summers as we have at home! No calculations as to whether it will rain to-morrow—no cutting winds—no thunder storms; day after day, week after week, the sun rises with the same undiminished splendour; and one day is an exact repetition of the other. It is true that the heat is occasionally too great; but, as a compensation for this, a delicious breeze blows as regularly as the day comes round, from 11 o'clock until 3. The miners are never out during the hottest part of the day, but reposing under some shady tree; it is too hot to travel. At the commencement of the night, one blanket is generally sufficient, but towards morning it becomes chilly. The thermometer, I am sure, goes down one-half. Indeed, I have, during the course of the present month, seen the ground covered with hoar frost; but here again is the beauty of the climate—the nights serve to equalise the days. Without such a provision, this would be a tropical climate; as it is, it is perfection.

HEALTH.

I consider the whole of the mines where I have been south to be healthy in the extreme; and I am happy to say that cases of serious illness are very rare. Those which have come under my notice have been in general dysentery—of which many have died from want of proper attention, advice, and remedies. The mining doctors are nothing but quacks; and the sufferer frequently cures himself by drinking a decoction of the bark of the white oak—at once a simple and efficacious remedy. The malady of the mines, however, I take to be sore hands, arising from the jar they receive in working with the crow-bar and pick. The worst kind of whitlows prevail, and great care is necessary; for I have known men incapacitated from work for two months at a time with this apparently trifling, but really serious malady. Cases of scurvy are becoming rare; the miners use every precaution against this dreadful scourge, eating raw potatoes, pickles, vinegar, &c., as a preventive. For the rest, the climate must be healthy; for it is really astonishing to see what excesses are committed, and without any bad results.

OF THE GOLD ITSELF.

The quantity of gold is incalculable, and in my belief not 1-50th part has yet been extracted; it is a complete puzzle to the miners, and every day the question is asked, "Where does it all come from?" To this I have neither the intention nor the ability to reply, for I have been equally amazed myself, and I doubt not that long ere this your readers have been enlightened with numerous able treatises on the subject. All that I shall endeavour to do will be to point out where, and in what quantities, it is found, &c. First of all I must ask you to dispel from your mind any ideas you may have associated with the word "mines." Up to this moment there have been no mines or mining operations carried on in California, or, at all events, not such works as we are accustomed to call mines in England. The country where the gold is found is mountainous, or, more properly, very hilly; the scenery putting me in mind of many parts of Derbyshire, only perhaps it is not so rugged. These hills are intersected in a manner which it would be difficult to find in any other part of the globe, with innumerable little ravines, called, in mining phraseology, "gulches," some of which have water in them during the whole season, but the greater part of which are dry by the time July arrives. It is in these gulches that the greatest quantity of gold is found, and it requires an apprenticeship of two or three months to know the spots where it lies, for in numerous instances small land slips have taken place, covering the original bed; and I may say that in nine cases out of ten this lowest level lies completely to one side, or in the hill; the difficulty is, therefore, to hit this spot; for there the gold is sure to be. The manner of proceeding is as follows:—A small hole, called a prospecting hole, is dug, varying according to circumstances, from 3 to 6 feet in depth, to find the bottom or ledge rock; from this one or two panfuls of dirt are washed, and if they give less than 12½ cents. worth to each pan, the hole is abandoned as worthless; for to pay even moderate wages, each pan ought to contain at least 25 cents worth. As soon as this trial is decided, operations are commenced by enlarging the hole, which, on an average, is perhaps 6 feet square by 5 feet deep: the top dirt is thrown off, and at intervals pans are again washed until reaching the earth containing the gold, which is then carried to the machine and washed in earnest. I should add that the earth for washing lies nearly all at the bottom, varying from 1 inch to 1 foot in depth; and not the least extraordinary thing is to find the gold occasionally under a false bottom composed of very hard rock. This is often mistaken for the real ledge, and holes are constantly abandoned under this impression—the knowing ones frequently get a good haul from a hole abandoned in this manner. Some of these gulches have been rich beyond belief, but the cream has long since been taken off, and all this year it has been difficult to find a gulch to pay anything like decent wages. Still some parties are very lucky, and within the last three months I have known small holes which have yielded amounts varying from 20 to 200 ozs. of gold. I am inclined to think, however, that the average daily gain of the miners throughout the southern mines for six months past has not been higher than $4, though, of course, some have made large hauls. And here let me state why this average is so low, and at the same time explain, for the information of friends at home, why they must not expect that their relatives here are rapidly accumulating fortunes. In the first place, the population is immense, and the gulches where water is running during the summer very few, and nearly the whole of these have been worked out. Here and there are spots untouched, where a man can find a week or a fortnight's work, and where he will make his $8 or $10 per day. Probably several days, perhaps a fortnight, will then elapse, before he makes anything, and meanwhile his expenses, at the rate of $1½ per day, are going on; in fact, the miner, unless he be very fortunate, loses, while running about, the small amount accumulated during actual work. Were it otherwise, were work plenty, money would rapidly be made, but it is for this sole reason that there are thousands without money enough to carry them to town, or even to pay their debts. Another species of digging is on flats, which are spaces of level ground found occasionally at the heads of gulches, and where it is necessary to dig very deep—say from 16 to 35 feet. This pays well, but it requires from 6 to 10 men to work a hole. Water, as a matter of course, again intrudes, and in such a manner that I have seen five pumps in one hole; and I know of others where the pumps are kept going night and day. Not unfrequently from 5 to 15 lbs. of gold will be found in a morning; but do not let this deceive you, for even such sums will only give an average to each man of from $8 to $16 per day, and such flats are few in number. I now come to river digging; and here again I think it necessary to acquaint you that the rivers where the gold is found hardly deserve their designation, and would be more properly denominated mountain streams or torrents. Gold is found in their banks, in their beds, and in places called bars, which are nothing more than large land slips which have completely covered the original bed. Some of these have proved very rich. I have known 40 lbs. taken out of a hole on a bar on the Calceceras River. This is difficult and very wet digging. It is necessary to go to a depth of from 5 to 25 feet, and generally a bar is composed of large heavy stones. I consider it the heaviest kind of work. Digging in the banks is simple enough; it can hardly be called digging. All that is required is to throw away the stones, and then wash from the top down, through 3 feet of sand and gravel. All depends upon the quantity washed. The machine must be kept constantly going; therefore, three is an advantageous number to work—namely, one to work the machine, one to carry the dirt, and one to prepare it. In this way it is possible to wash 300 buckets of dirt a day, yielding generally $24, occasionally more.

To get at the beds is the next consideration; this is effected by digging a new channel or race, and turning the river into it. From 10 to 50 men are required for the purpose, and difficult enough it is, for frequently solid beds of rock are encountered in making the race, which require blasting, and men undertake this dangerous process who are utterly unacquainted with the proper mode. The consequence has been, that several have been killed and seriously wounded, and the companies who have turned the rivers have been most disappointed, and have lost money, caused by the imperfect way in which the dams and works have been constructed, and from the uncertainty of finding anything even when the river is turned. Notwithstanding, some have done well, and I know men who have each made their $800 to $1000 for three months' work only. Some of our railway navvies and canal makers would do well at this work, and at gold digging generally, if there was any guarantee that they would work steadily and soberly.

TOOLS.

The tools used in California are the pick, shovel, and crowbar; the very best of each that money can purchase are requisite, and yet, strange to say, there are no good tools to be obtained in the mines at any price. The pick is the same as is used in England, not too heavy, but the eye should be large and each end well steeled. Picks made in the country, without any steel, weighing from 6 to 8 lbs., are sold at the rate of $1 per lb., and require sharpening every week—$8 would willingly be given now for anything like a proper instrument. The shovels require to be all steel, well strengthened in the back; those marked Amos, which come from the States, are much approved. I do think similar ones are made in England; the price now given for them is one ounce, or 3l. 4s., and they are not to be obtained. The handle is short, and they are light. All others have been proved to be useless, because not good enough. The spade is not used. A good crowbar is 6 feet long, not too heavy, and of the best material. I have known an ounce paid for such a one. Crowbars of 4 and 4½ feet are much used, price $8, and difficult to obtain. The cradle, indeed, deserves its name, for it very much resembles that article of furniture in domestic arrangements, only that it is smaller. A cradle is about 4 feet long, 20 inches broad, and the highest part not more than 2 feet from the ground—its weight about 25 lbs. It has a sieve at the hind part, through which, with the aid of water thrown on it, the dirt and gold passes, leaving the stones to be thrown off. The machine being on a small incline, a small slip of wood on the bottom board is all that is necessary to prevent the gold from passing out, and twice a day this little compartment, containing 8 lbs. or 10 lbs. of dirt, in which the gold is lodged, is washed out in the pan. The time is approaching, and is near at hand, when it will be proved how rich California really is; there is no fear of the gold failing, the tract of country where it exists is immense; hitherto the work has been done by men in parties of two and three; they have taken the cream, and men can still make occasionally from $20 to $100 a day, but there are also hundreds who would rather work for wages at the rate of $5 a day, and who would make more money in that way than mining on their own account. The great quantity of gold is high up in the hills, not one of which have yet been touched—capital is required for the purpose. I fully expect to see this employed, and large works carried on with machinery, &c., within a short time from this. A word as to the size of the gold found, for I see many false impressions are abroad on the subject. The gulch gold is not dust, the smallest piece would weigh 2 or 3 grains, and more generally 8 and 10 grains—the greater part is composed of such pieces; but pieces of from $2 to $20 are daily met with. The very large pieces of which you hear are usually more than seven-eighths white quartz stone—for instance, a piece found on the River Mariposa, within a month or two, weighing 63 lbs., contained actually less than 40 lbs. of gold! The river gold is at once distinguishable from the gulch gold; much of it is real dust, and the remainder is in small pieces, very smooth and polished, caused by the washing it has received; large pieces are uncommon; the largest I have seen weighed 17½ ozs., found by a Sandwich Islander, who was at work within 5 feet of your correspondent.

The mines offer an ample field for an able caricaturist, and if I am not misinformed, some of our first-rate London talents have already been here for the express purpose. A real California miner, when at work, rocking the cradle, with his muddy face and curious garments, has a strange look, and could he be represented at home, would "astonish the natives" not a little. People from every known part are here, even Chinese. It is not necessary for me to enumerate them—there are representatives of every nation and every costume. It is curious to see how readily a man's country is known; he has always some distinctive trait which belies him: thus in one moment an Englishman is known from an American, a Frenchman from a German, a Chilian from a Mexican, &c.

THE GOLD REGIONS OF AMERICA.

The *Placer Times* of the 26th of October, published the following valuable article on the yield of the mining regions:—

It is very difficult at the present time to collect information as to the productiveness of the various mines of California. Even the number of persons employed upon the various rivers is but to a limited extent known. Those who have travelled extensively through the country, and explored the various rivers high up into the mountains, of course, can form very correct conclusions, but there are comparatively few who have done this. Most miners have but partially explored the country, and even those who have made extensive examinations have felt but little inclination to convey the information to others. For this reason we the more willingly lay the estimates which we give below before our readers, believing, although they are somewhat imperfect, that they will be of use to those who have not had the leisure or inclination to make thorough examinations. The estimates which we give include the mining regions from Feather River, upon the north, to the Cosumnees, upon the south, which contains, at the least, two-thirds of all the miners employed in the country. The mining regions upon Feather River commences below the foot-hills of the mountains, some 30 miles from Marysville, and extends back upon the mountains for something like 80 miles. There are probably not less than 9000 persons at work upon this river. The most productive portions the past season have been in the foot hills and upon the south fork of the river. It is the general impression that the sum averaged by miners upon this river has been about $6 per day to the man; this, allowing 24 working days to the month, would give, for five months, as much, probably, as most of the miners will labour during the mining season, for each miner $120 per month, and $600 for the five months, producing an aggregate of $5,400,000. The Yuba, with its tributaries, Deer-creek, Gold-run, &c., has a population of about 30,000. The mines in this region have, in many instances, paid more than those of any other portion of California; but there has been a large number who have succeeded but poorly, which has reduced the average to each man to something less than that upon Feather River. Upon this stream we believe the average has not been over $4 to each person employed. This would give for the total amount of gold dust taken out in five months, $14,400,000. Bear River, the next stream upon the south, contains probably a population of 3000. This stream, although no very large amounts have been realised by persons, has produced a fair average—say, $4 to each miner, which will give in the aggregate $1,440,000. The American River, we presume, contains a population of 16,000, distributed on its tributaries as follows:—5000 upon the North Fork; 5000 upon the Middle Fork; and 6000 upon the South Fork, which, at $5 as the average, would produce, as above, in five months, $9,000,000. This would give, in the aggregate, for Feather, Yuba, Bear, and the American Rivers, together with their tributaries, the sum of $30,240,000, as the product of the labour of 57,000 persons. This sum, we believe, is as near an average of the produce of the mines upon the rivers named for the past five months, as can well be ascertained at the present time. We have in our estimate taken but a portion of the mining region of California, as our readers will see, but we presume the quantity of gold dust taken from these streams, or from their immediate neighbourhoods, constitutes at least two-thirds of all the gold taken from the mines of California. The quantity obtained by miners during the last winter was small, in proportion to what it ought to have been. Miners then looked forward to the opening of spring, anticipating far richer diggings in the beds of rivers when the waters should subside; and thus the winter was suffered to pass without proper exertions upon the part of the miners.

LITERARY NOTICE.

Turning and Mechanical Manipulation. A work of General Reference and Practical Instruction on the Lathe, and the Various Mechanical Pursuits followed by Amateurs. By the late CHS. HOLTZAPFFEL, A.I.C.E. Vol. III. Illustrated by upwards of one hundred and eighty wood-cuts. Holtzapffel and Co., 1850.

The two volumes of this work, already published, have been noticed in the *Mining Journal*—the first in 1843, the second in 1846—when the peculiar merits of each volume were duly pointed out, and a concise description given of the matters treated of. By the preface to the present volume, we lament to learn that its talented author was prematurely cut off before the termination of this portion of the work, in which, however, considerable progress had been made towards completion. There is, indeed, ample evidence of equal felicity in describing mechanical processes, and the same admirable arrangement of subjects, which distinguished the former volumes. As the work is one destined to take rank among the first of its class, and is, in fact, more complete than any other we are acquainted with, it may be right to state that the first volume treated of materials, their differences, choice, preparation, and various modes of working them, generally without cutting tools; the second volume, of the principles of construction, action, and application of cutting tools used by hand, and also of machines derived from the hand tools. Vol. III., now before us, deals with abrasive and miscellaneous processes, which cannot be accomplished with cutting tools; while, according to the plan of the work, it is intended, in the three concluding volumes, to describe the principles and practice of simple turning; also those of ornamental or complex turning, ending with the principles and practice of amateur mechanical engineering. A treatise on this comprehensive scale, each division forming in itself a large volume, if carried out with as much ability as is displayed in the parts already before the public, cannot but be esteemed a most valuable contribution to mechanical science. From the brief reference made to the second volume, it will be seen that the operations therein described, being performed by the application of cutting tools, are widely different from those which are treated of in the volume before us. These last refer to the less imposing and more homely processes of grinding and polishing, sharpening tools, abrasive processes in all their variety, gem and glass engraving, varnishing, and every other means by which beauty is given to the rough substance, and effects produced unattainable by any other species of manipulation. Simple as the enumeration appears, it comprises some of the nicest and most skilful processes that can be imagined, from setting a razor, an operation practised by so many, yet understood by very few, to grinding the specula for Lord Rosse's monster telescope. The materials and apparatus by which so many marvellous effects are produced, form the subject of a descriptive catalogue of nearly 100 pages, of great interest and value, embodied in the volume, and evidently compiled with much labour and discrimination. The chief materials subjected to the various polishing and abrasive processes, in woods, ivory, metals and alloys, marble, glass, &c., have been described in the first volume; in addition, we here find various hard crystalline bodies, on which cutting tools have no effect. The chapters devoted to lapidary work and seal engraving will be found very interesting, as developing the secret of a number of processes not commonly known, yet requiring the most delicate manipulation; nor will the description of gem and glass engraving be found less worthy of notice. "The process of seal engraving," it is stated, "is applied to all gems inferior in hardness to the diamond, and even this is said to have been engraved in some rare instances. The sapphire cuts very slowly, but smoothly; the ruby cuts slowly, but small pieces are liable to break off in flakes; carnelian and bloodstone are close in their structure, and admit of being cut with very smooth surfaces. Softer stones admit of being cut more rapidly, but do not, when finished, present such smooth surfaces as the harder and more compact materials. The amethyst is, perhaps, as soft a stone as can be cut very smoothly; nevertheless, glass, and even marble, are sometimes successfully treated by the seal engraver, but the tools soon become deteriorated, owing to the diamond powder becoming embedded in these soft materials. When the stones consist of layers of different degrees of hardness, increased caution is required to prevent the tool penetrating more deeply at the softer parts.' We are told also that the stones to be engraved are always previously prepared to the general form by the lapidary, and frequently they are set by the jeweller before they are engraved; and we observe a section devoted expressly to the lapidary apparatus for amateurs, with explanatory wood-cuts. The fullest information, in short, will be found relating to these interesting processes, and to the tools by which the different effects are produced. The last chapter is on "varnishes," or solutions of the various gums, those principally employed being amber, animé, copal, lac, sandarac, mastic, damar, and common resin, dissolved in linseed oil, turpentine, wood naphtha, or spirits of wine. The mode of manufacturing the finer varnishes is more difficult than might be imagined, as may be seen from the process adopted by Mr. J. Wilson Neale, for which he received a gold medal from the Society of Arts, and which is quoted at length in this volume. Altogether, this portion of the work fully maintains the high standard reached by the preceding volumes. We know of no process, not accomplished with cutting tools, of which an adequate and practical description is not given, in a form calculated to instruct and benefit the amateur of mechanical pursuits. From the nature of the subject treated, this volume seems to occupy a middle place in the scheme laid down at starting, and admirably fulfills its purpose in relation to one great division of mechanical processes, while in those which are to succeed we may anticipate a like full and satisfactory development of simple and complex turning. We are glad to see it announced that the notes of the late Mr. Charles Holtzapffel for the fourth volume are very numerous; and, for the sake of the publisher, as well as that portion of the public interested in such pursuits, we trust that a much less interval will elapse before it makes its appearance.

A deputation, consisting of Messrs. W. Routh and Ravenshaw, directors of the New British Iron Company, and Mr. R. Roy, director of the Shrewsbury and Chester Railway Company, had an interview with the Commissioners of Railways on Monday, at their office in the Board of Trade.

Mining Correspondence.

BRITISH MINES.

ALFRED CONSOLS.—There has been no ground driven in the 80, east of Field's engine-shaft, since last report, neither will there be for the next fortnight; the shaftmen will be employed about the pitwork. The lode in No. 2 winze is 5 ft. wide; about 3 ft. of the south part is nearly all solid ore; the remaining part of the north is capels, mixed with ore, worth in all 70*l.* per fm. On last setting day we set a piece of ground to stope in the back of the 70 fm. level, east of said winze; the lode here is about 7 ft. wide, nearly all solid ore, worth from 120*l.* to 140*l.* per fm. The lode in the 70 fm. level, east of said shaft, is, on the part which we are driving on, 6 ft. wide; 3 ft. of the south part is principally capels, the remaining 3 ft. on the north is worth 50*l.* per fm. We calculate that there is still on the north more lode, which will be proved in the course of this week. The lode in the winze sinking under the 60 fm. level, west of Wyld's shaft, is from 10 ft. to 12 ft. wide, and is nearly all a hard course of copper ore, worth from 130*l.* to 150*l.* per fm. There is no change to notice in any other part of the mines since the last report. Our copper sampling on Monday was 209 tons; the quantity is not quite as much as last month, owing to the putting a new boiler to work at the steam-whim, and has been impeded by the alteration of the pitwork; as well, there was nearly 20 tons of ore in our last sampling raised from the Great Wheal Alfred.

BARRISTOWN.—The ground in the cross-cut is of the same promising character as last reported, and indications equally as good as we have ever had—such as small veins of lead and prian heads, and branches of gossan, all inclining or dipping south, which gives me to think they are droppers dropping into a lode which is still to be found in that direction; and the ground being of such congenial quality for mineral, affords every encouragement for perseverance. The lode in the end east is small, and, at the present time, poor.

BODMIN CONSOLS.—Hooper has just brought me some splendid stones of copper from the No. 2 winze. I think I may state now for certain that we have the junction of the copper lode I referred to in my report of the 12th instant. The leader of copper in the north end of the winze is about 1 ft. wide; I think it has very much the appearance of something great. The north level in the 13 continues to improve, producing some good work for lead; I have no doubt that in a very few fathoms more we shall have a course of lead. The 13 south continues to improve; the lode is large, with good stones of lead. The ground is more favourable in the engine-shaft for sinking; it is a beautiful blue killas, quite clear of that volcanic rock Mr. Murray referred to. We have drained all the water from the 13 fm. level; this looks well. If the water continues to increase much more we shall have to get another 10-in. lift to sink with, as all the water is at the bottom of the shaft.

BODMIN MOOR CONSOLS.—Our new lode is improving as we sink, and we have a splendid course of gossan, intermixed with tin; the lode is 10 ft. wide, underlying 2 ft. in a fm., and we are in daily expectation of meeting a course of ore. The stratum is a decomposed granite, most congenial for ore.

BODMIN WHEAL MARY CONSOLS.—The engine-house for the 50-inch cylinder engine will be completed by the end of the month. The 16½-inch cylinder engine will be put to work on Monday next, the 30th inst. We have about 12 tons of copper ore at grass, broken from the backs of the lode in the adit level, and the tributers continue to earn wages in the pitches set, from 6s. 8d. to 10s. 6d. in 1*l.* in that level. As soon as the small engine goes to work, we shall commence to drive east and west upon the lode in the 10 fm. level, and open the orey ground for the tributers.

BRYN-ARIAN.—The lode in the 10 fm. level west is 8 ft. wide; the part we are carrying for the level is mixed with ore: the stope in the back of this level will yield 10 cwts. of ore per fm. The lode in the winze sinking under the adit level west is large, with several small branches of ore; we hope to communicate this winze to the 10 fathom level in about a week from this time; the stope in the back of this level is yielding about 15 cwts. of ore per fm. The wheal-pit at Pensarn will be completed the end of this week; and if the pumps arrive we shall be ready to work in a fortnight. We have not drawn any stuff, or dressed any o... since last report, as the shaft was obliged to be covered over, to allow the men to cut the bob-plat at the adit level.

BUTTERDON.—The engine-shaft is sunk 26 fms. 4 ft. from surface; the stratum is a favourable sort of killas—good ground for sinking. Since my last report we have discovered a branch of loose spar, containing spots of lead. At our present rate of sinking we shall get to the 30 fm. level in three weeks, to which depth I intend to commence a cross-cut to intersect the lode.

CARTHEW CONSOLS.—From the late heavy rains, we have had a great influx of water in this mine, which, coming in contact with the second slide, it being large in the engine-shaft, has much impeded our progress in sinking this week, by bursting the timber therein, although of more than the ordinary size we have been in the habit of using, thereby rendering it necessary for us to re-timber the same from the 75 fm. level to the bottom of the sink; this, with considerable other work in the shaft, found of great importance to be done, from the augmented duty the engine has to perform by the late increase of water, is now completed, and on Monday the men will be enabled to resume their work in sinking; but, since my last report, the then anticipated improvement has been partially verified, for, in the since then development of the lode, we have found it considerably improved, and have a very good branch of lead and copper in it. For want of ventilation, which we are endeavouring to obtain as early as possible, by communication with the 65 fm. level, we have suspended the north end 75 fm. level, wherein there is a very good lode for lead and copper, and have put the men to sink the winze in the bottom of the level above, wherein the lode is also producing well. In the south end, 75 fm. level, the lode continues to improve, and is at this time a tolerably good lode, about 2 feet. wide, all saving work. The men are progressing very well in rising against the middle shaft. The lode in the south winze, 48 fm. level, continues to show well. The tribute department is, upon the whole, much improved of late.

COOK'S KITCHEN.—Chapple's Lode: In the 200 fathom level, west of Chapple's shaft, the lode is 4 ft. wide, worth 6*l.* per fm. In the 190, east of Chapple's shaft, the lode is 4 ft. wide, poor; we have about 30 fms. more to drive to come under the run of tin ground that is gone down before us in the 180 fm. level. We have a pitch working in the bottom of the 190 fm. level, west of Chapple's shaft, at 6s. 8d. in 1*l.*, a fair wages place in that tribute; we have a cross-cut driving south, at the western part of our boundary, in this level, to intersect Dunkin's lode, ground cost to drive 5*l.* per fm.; we have about 23 fms. more to drive to intersect this lode. The 180 fm. level cross-cut, north-east of Chapple's shaft, to cut the north part of Chapple's lode, producing saving work for tin. In the back and bottom of the 160 fm. level, on the north part of Chapple's lode, we set two pitches last month, which are producing rich work for tin. On the whole, our tribute department is looking much the same as when last reported.—Eudey's lode: The 92 fm. level we have set to drive east on this lode; the lode is 1½ ft. wide, poor at present; we have about 12 fms. more to drive to the extent of our boundary on the east; we anticipate this to be the same lode they have in Tincroft, called Grout's lode, from which they are making large profits in this level; we have a pitch working on this lode, in the back of the 80 fm. level, at 10s. in 1*l.*, a fair wages place.—North Tincroft Lode: The flat-rod shaft, sinking under the 90 fm. level, lode 6 ft. wide, worth 12*l.* per fathom. In the 90 fm. level east, driving on this lode, the lode is 7 ft. wide, producing good stones of copper ore; in the 90 fm. level end west the lode is 8 ft. wide, producing good stones of yellow ore, and has a very promising appearance. It is my opinion, and which is fully concurred in by the several parties who have inspected this part of the mine, there is not the least doubt but it will make large and rich courses of ore at a greater depth.—New South Lode: The working on this part of the mine has been abandoned for the last 14 or 15 years. In the back and bottom of the 47 fm. level, on this lode, there have been great quantities of ore raised. There is a shaft sunk 6 fathoms below the adit level, on this part of the mine; we find that there is a rise above this level 17 fms., with the intention to hole to this shaft; by levelling it we have about 16 fms. to rise to hole; there is 40 fms. from this shaft to our boundary on the west; there are three cross-courses between this shaft and our boundary, where between these cross-courses Dunkin's lode made her richest courses of ore; there has been nothing done on this lode the west of this shaft, which I think is a very important point. A very small outlay will lay open this ground to the surface, and we shall have tribute ground after communicated to set at once.

DEVON WHEAL MARY ANN (NEAR BRIDESTOW).—The lode in the deep adit level, driving west, continues of a most kindly description, although not quite so large as when last reported upon, being now about 3 ft. wide, but, from the appearance of the south wall, is soon likely to resume its usual size of 4 ft.; it is composed of peach, capels, prian, spar, mundic, and good spots of ore, and presents a highly favourable appearance, underlying about 1½ ft. per fm., and will, without the least doubt, soon show a good bunch of ore; driving at 5*l.* per fm. This level, going west, is in a highly favourable situation, and is calculated to show a back of 45 fms., with an extent of sett upwards of a mile in that direction.

EAST BALLESWIDDEN.—Since the level has been completed to the wheel pit, the men, with the sawyers and carpenters, have been engaged about the wheel, the building of which is progressing as quickly as possible. The water-course will be finished, to bring the water over the wheel by the time it will be required, and I feel very anxious to get the wheel to work, so as to fork the water, and get down on the tin ground.

EAST CROWNDALE.—We have not done much in driving in the 50 this week. We unfortunately broke our working barrel. The lode is much as last reported. In the 40 east the lode is large and tinny; but the ground is hard. In the winze in the bottom of the 28, the lode is small, producing a little tin.

EAST SHARP TOR.—In the lode in Hitchins's shaft there is no material alteration since last reported on, being composed of strong capels, spar, quartz, and spots of yellow copper ore of good quality are occasionally met with.

EAST WHEAL GEORGE.—The engine-shaft is down 9 fms. below the 12 fm. level, the ground in which is without alteration; the lode in this level east is about 3 ft. wide, composed principally of capel and spar; the same level west is suspended, in consequence of its being within about 6 fms. to the surface; the rise in the back of this level, west of cross-cut, is communicated with the adit level; the stuff broken in this rise is fair stamps' work; the men who were employed here are now stoping the piece of ground between the rise and Crowl's winze, the lode being 20 in. wide, producing moderate work. The lode in the stopes west of Crowl's winze, is 20 in. wide, worth 6*l.* per fm. The lode in the stopes in the back of the 12 fm. level, in Mr. Adams's land, is still worth 15*l.* per fm. We sampled, on Thursday, the 19th inst., at Plymouth, 21 tons 14 cwts. 3 qrs. of good quality ore, a sample of which I have forwarded.

EAST WHEAL JOSIAH.—The lode in the adit end south is much the same in size and character as last reported on, being about 2½ ft. wide, composed principally of flookan, mundic, spar, and spots of copper ore occasionally.

EAST WHEAL LEISURE.—The engine-shaft is cleared to the 17 fm. level, which level is extended 22 fms. east of shaft; the main part of the lode believed to be standing to the south. The lode in the 7 fm. level west is split; the part driving on is 18 in. wide, producing good stones of ore. Some productive ground has been opened by a winze to the 7 fm. level. Taylor's shaft, sunk 6 fms. below adit, has passed into killas, with good strings of ore passing into the north lode. The lode in the adit east, on Taylor's, is 5 ft. wide, producing 2½ tons of ore per fm.; the same level west is producing about 2 tons per fm.; 6 fms. have been opened on this lode, producing 4½ tons per fm.

EAST WHEAL REETH.—I have put six men to drive the 10 fm. level under the present bottoms, for 4*l.* 14s. 6d. per fm., so that we may get under to let down the water as soon as possible; by this means we shall ascertain whether the tin lode goes down, and if it does we shall be enabled to raise 100 barrows of tinstuff for one-half we are now paying; we have 13 fms. more to clear up to the bottom of the shaft, where I find, from Capt. Hobler, who worked her last, that he has driven a level south to cut the caunter and Wheal Reeth lodes some distance, and by his calculation he was within 10 or 12 fms. of doing so. He says his expectations were very sanguine for those lodes at that time, and he would have given 500*l.* if he could have gone on and cut them. He also says he is sure when we cut the caunter or carbons which runs through, she would make a rich mine.

EAST WHEAL RUSSELL.—The engine-shaft has been suspended since you were last advised, owing to the increase of top water from the late rains, during which time it has been collared, divided, eased down, and made complete in all respects to bottom. The men also have been engaged in clearing the old men's adit, in order to the taking off of the top water, to admit of the most effectual sinking possible of the engine-shaft, which will be resumed on the 27th inst. The lode in the said adit is equally large and encouraging as elsewhere, and the workings of the old men on the tinny portion of it are seen to be extensive. There has been also discovered in the clearing of this old adit another lode to the south (about 8 fms.) of the other, and of a very promising general character, full 10 ft. wide, composed for the most part of gossan, peach, and capel, and in places taken away for a considerable extent for the tin which it contained. Our whim has been completed, and will now enable us to get away the stuff from the men in the shaft satisfactorily. The little house for temporary counting-house, changing, &c., as also a smith's shop, have been erected, and the necessary road into the mine from the main road of the district, from Tavistock to Morwellham, is in course of being made. I hope to report more favourably on the character of the lode in the engine-shaft next week.

ESGAIR LLEE.—The lode in the deep adit, east of Morgan's winze, is from 2 to 3 ft. wide, looking more promising than last reported—producing stones of ore, but not sufficient to set a value on. The south part of the caunter lode in the 12 fm. level, east of Morgan's winze, is improved since my last, and will yield 5 or 6 cwts. of ore per fathom. The stopes, on an average, are without alteration since my last, yielding about half a ton of ore per fathom. During the past week we have been able to do but very little on the dressing floors, in consequence of the severity of the weather, but the snow at this time is leaving us a little.

GREAT WHEAL MARTHA.—Operations having been commenced to ascertain the true direction of the lode recently discovered in the Lamherooe Wheal Maria Mine, I am happy to say the lode cut at 3 fms. under the surface in the Great Wheal Martha, about 20 fms. north of the main engine-shaft, and is correspondent in its run and underlay, presenting favourable appearances to be productive of ore at a deeper point. It is 4 ft. wide, producing gossan, mixed with spar, prian, and mundic, with a small flookan on the footwall. As there is a good shaft 20 fms. to the south of the lode, and 40 fms. deep, I should think it would be advisable to cross-cut to the lode in the adit level 12 fms. deep, to ascertain more clearly its properties and size in a firm stratum.

HAWKMOOR.—The 30 fm. level west has been poor for some fms., and is suspended while a rise is being made to meet a winze in course of sinking under the 20; the lode in the rise is 18 in. wide, and giving every indication that the ore in the winze, yielding 4 tons per sinking fm., of 9 ft. in length, is holding down nearly to the back of the 30 fm. level; this level east presents a lode 3 ft. wide, which has produced nearly 4 tons per fm. for the last 4 fms.; a cross-course has been met with, within which the lode is as rich as ever, and this will give good backs as it holds down from the 20 fm. level, where it was productive of tin and copper. A stope in the back of the 20 east is worth 2 tons per fm. The stope in the back of the 20 west is still orey, but poor. The 20 end west is 2½ ft. wide, orey throughout, and very kindly, but not rich; from the gossan seen at surface, a bunch of ore may be looked forward to in this level, and also in the 30, in a short distance. We sampled on the 3d inst. 26 tons 9 cwts. 2 qrs. of copper ore, realising 137*l.*, and expect to have 30 tons ready for sampling in about 10 days.

HOLMBUSH.—The lode in the 130 fm. level, west of the diagonal shaft, is 2 ft. wide, producing 4 tons of copper ore per fathom of rich quality; the stopes in the back of this level will produce 3½ tons of ore per fm. The ground in the 132 fm. level cross-cut south, towards Hitchens's engine-shaft, is favourable, so is the ground in the north cross-cut in this level. At present, we have a hard floor of killas, or clay-slate, in Hitchens's shaft, which we hope to get through shortly. The flap-jack lode in the 120 fm. level, east of the great cross-course, is 15 in. wide, producing stones of copper ore; the lode in the rise above this level is also producing stones of ore, and we expect to communicate to the 100 fm. level shortly. The lode in the 120 fm. level south is 7 ft. wide, producing stones of lead, and opening tribute ground. The flap-jack lode in the 100 fm. level, west of Wall's engine-shaft, is 2 ft. wide, composed of mundic, spar, and stones of copper ore. There is a great deal of water issuing from the south side of the level, which circumstance indicates there is more lode still to the south, which we shall soon ascertain. The flap-jack lode in the 100 fathom level, east of the great cross-course, is 5 ft. wide, producing 6 tons of copper ore per fm.; the lode in the winze near the cross-course, in the bottom of the 100, is 12 in. wide, producing stones of copper ore. We are expecting a vessel to load the parcel of lead every hour.

KIRKCUDBRIGHTSHIRE.—At Stewart's shaft, the lode in the 74 end west is 3 ft. wide, yielding above half a ton to the fathom. At Keith's, the lode in the 62 end west is 3 ft. wide, with spots of ore. At Gilpin's, the lode in the 62 end east is 5 ft. wide, with stones of ore; the 62 end west is 4 ft. wide, with stones of ore. The 50 end west is 4 ft. wide, with spots of ore. The 40 end west is 3 feet wide, with a stone of ore near the bottom of the end.

LAMHEROOE WHEAL MARIA.—At the 50 engine-shaft we have opened on the lode, east of cross-course, 4 fms.; the lode is 2 ft. wide, and has a branch of ore 6 in., and another of tin 5 in.; the remainder of it is tin throughout; this lode increases in size as we proceed from the cross-course, and is of a promising character. In the stopes in the back of the 60 the lode is 3 ft. wide, and proves more productive for tin than we have hitherto seen it; in the 60 end east the lode is unsettled; the cross-cut north, in the same level, is driven 35 fms. 2 ft. At Addis's shaft, on champion lode, for another 10 fms., the men ran from their contract; others having succeeded them, no further delay is thereby occasioned, it being now down 23 fathoms 1 foot. Jessie's shaft is sunk from the surface 5 fms., and have about 4 fms. more to sink before communicating with the winze on the B lode, which will take us upwards of a fortnight to accomplish. On the B lode little or nothing has been done, the surface water being so much increased by the heavy floods, and also for want of air, that, until the shaft is holed, whim erected, &c., our progress will be but slow. The whim is sunk 5 fms. 4 ft. 6 in.; the lode is precisely the same as last reported, and anticipate the most successful results from it as we proceed in depth. I have put the men to sink for a dam on the western side of the winze on the B lode, to take up the surface water, where I intend putting a hand-pump.—N.B. Jessie's shaft is the new shaft on the B lode; Addis's shaft is ditto on the champion lode.

LLWYNMALEES.—The 8 fm. level west is more promising. The stopes from 11 to 17 fms. west of western winze are very good. In the western winze, sinking under the 8 fm. level, the lode is improving. In the rise from the 14 fm. level, to meet the western winze, a good lode. The 14 fm. level west is improving. The water was out of London shaft on Wednesday. In the plat in the bottom of the 14 fm. level a strong lode.

NORTH WHEAL FRIENDSHIP.—The 30 fathom level, west of Buller's engine-shaft, continues much the same, producing stones of ore. The lode in the 32 fm. level, north of machine shaft, at Wheal Betsy, is 3 ft. wide, producing good stones of lead, saving work. No lode has been taken down during the last fortnight in the deep adit level, driving north from Matthews's shaft. The pitches are looking favourable, yielding rather more lead ores than of late.

NORTH WHEAL ROBERT.—In Murchison's engine-shaft we have sunk about 4 fms., but the water is so powerful—upwards of 200 barrels in 24 hours—that by the end of the month we shall most likely be obliged to abandon the shaft until a wheel can be procured; I would, therefore, strongly recommend that a small wheel of 12 or 15 ft. diameter be immediately erected to work a 6-in. lift, to enable us to sink the shaft 20 fms. or more. Mr. Collier consents to our using the water from the greenstone water-course for three or four months, and, in the meantime, we can be preparing our large wheel. In Halket's shaft we have sunk 3 fms. 3 ft., but last week I was obliged to remove the men for two days, in consequence of the increase of water, and they were engaged in widening the water-course for the intended large wheel. In the adit level 3 fms. 3 ft. have been driven in ground which is a congenial killas, but the lode is for the present rather small, 1 ft. 6 in. big, composed of capels, mundic, peach, and spots of ore, evidently disordered by a small cross-course, which the end has just passed through. The timber for the two shafts is nearly all ready. We have built a small powder-house. At the end of this month you shall be furnished with particulars of all the work done since the commencement of our operations.

OLD WHEAL BASSET.—A lode has been cut in the new shaft about 12 fms. from surface, supposed to be the red lode; it is from 6 to 8 in. wide, 4 in. of it very rich for copper. A level is set to drive east, and if the ore continues, it will open good tribute ground. The lode in the shallow adit, west of gossan shaft, is 4 to 5 ft. wide, composed of gossan, spar, and spots of ore.

PEN-Y-BANK AND ERGLODD UNITED.—The lode in the adit level, east of the cross-cut, is large, but at present poor. At Pen-y-bank shaft we have secured the old workings, and have commenced again drawing water; the shaft now appears to be firm, and we hope soon to see the bottom of it.

PENZANCE CONSOLS.—We have this day inspected the mine, and are glad to notice so great an improvement in each lode. The mine, for the past ten months, according to the run of tin ground as laid open, it has been proved has been worked in the very best manner for the interest of the adventurers. The north lode levels have now got down into settled ground, and we now consider the 24 fm. level on it worth 12*l.* per fm., for 10 fms. long—in fact, four men during the past month, in working away 4 fms. of it, have raised from 55*l.* to 60*l.* worth of tin, and we can see good tin ground on this lode for 20 fms. in length more. There is a good bunch of tin on the south lode, but it will require from this date three months to extend the levels east and west on this to lay open the tin ground, after which we feel convinced the mine will give a profit to the adventurers. We have to remark that the tinstuff now raising is richer than it has been for the last 10 months. We recommend the sinking of the engine-shaft, which in 6 fms. sinking will cut the intersection of the north and south lodes; and we recommend the driving of the 24 fathom level on the north lode, in which we fully expect to lay open some valuable ground.

SOUTH SPEED.—About 25 tons of copper ore were sampled here on the 23d inst. In the progress of the working of this mine there is a continuous improvement both of the tin and copper lodes, and the calculations as to the productive qualities and consequent returns are fully established.

SPEARNE CONSOLS.—Since last report the engine-shaft has been completed to the 140 fm. level, and the bottom levels are extending east and west in very good tin ground; in the western end we have a good course of tin. The 128 fm. level west is in good tin ground. The 116 fm. level is extended west from shaft 34 fms., and the last 30 fms. have been excellent tin ground, and the present end is now rich for tin; about 20 fms. west of shaft we have a fine course of tin, upwards of 2 ft. wide, worth 100*l.* per fm. The last 40 sacks sampled this week from this lode produced upwards of 64*l.*, which is equal to 16*l.* per ton in the stone, as brought to the surface. The tributers have only 2s. 6d. in 1*l.* for working this ground, and are doing well. We beg to remark that tin is all in whole ground, no level under it as yet. We have a good lode of tin in the 104 fm. level, west from engine-shaft. The 90 fm. level is in good tin ground. There is also a good bunch of tin in the 40 fm. level east. All our tribute pitches throughout are looking well; we never raised more tin in any one of the past 12 months than in the last. We have a side lode about 30 fms. north, which we are driving to cut, and expect to cut it in a few weeks. Our north cross-cut is 70 fms. under the adit level, and if we cut this side lode, and it should prove as good as the present working lode, we shall then be in a position to double our quantity of tin; in fact, we are expecting great things from this side lode. There is a greater quantity of tinstuff now at the surface than there was at this time last year.

SOUTH TRELAWNY.—We still continue to drive south on the branch we cut in the costeaning cross-cut, as last reported. In the 60 fm. level the lode is about 1 ft. wide, composed of soft spar, killas, and a great deal of fine mundic, and also particles of lead; it is very regular, with two good walls, and underlies east about 1 foot in a fm., and also the bearing up; it is regular, and ground favourable, discharging much water.

TINCROFT.—The 132 fm. level, east on Highburrow, has considerably improved—this is the only alteration I have to advise.

TRELEIGH CONSOLS.—Christoe Lode: In the 100 fathom level, west of Garden's, the lode is 18 in. wide, with stones of ore. In the 90 fm. level, west of Garden's, the lode is 2 ft. wide, worth 14*l.* per fm.; in the stopes above this level the lode is 20 in. wide, worth 12*l.* per fm. In the 80 fm. level, west of cross-cut, on the north part, the lode is 18 in. wide, with stones of ore, and is looking more kindly. In the 70 fm. level, west of Garden's, the lode is 18 in. wide, with stones of ore.—Parent Lode: Parent engine-shaft, below the 52 fm. level, is sinking in the country. In the 52 fm. level, east of ditto, the lode is 18 in. wide, with stones of ore. The rise above the 40 fm. level, east of ditto, is holed to the 30 fm. level. In the 30 fm. level, east of ditto, the lode is disordered by a cross branch.—Middle Lode: In the 40 fm. level, east of cross-cut, the lode is 18 in. wide, with stones of ore; in the rise above this level, west of cross-cut, the lode is 15 in. with good stones of ore. Burgess shaft, from surface, is sinking in the country, for the middle lode.

THE MILWR MINES.—Agreeably with your instructions, I beg to say that I have inspected the Milwr Mines, underground and at the surface, and from the information gathered from sources and books on the mine, corroborated by the most straightforward information I could obtain and the minutest investigation, I am led to the following conclusions:—

These mines had gone into a state of the greatest ruin within the last 10 years; first, by the failure of pit or pump work improperly placed, and constant failures in sinking for the last 10 fathoms below the deepest level (204 yards deep) to obtain certain orey ground. This orey ground is still only very partially worked, not more than 1½ fathom deep below the 204 yards level, and a great quantity of ore ground on the veins already discovered in the levels below Roskell's cross-cut, yet unworked, and there are still several veins to the south in Roskell's cross-cut, promising fair at greater depth—say, at the 112 or 160 yards level, when cross-cutted, promises to be very productive; and the Wolfa and other veins to the north, promises most favourably for discoveries between Milwr, Wolfa, and Herward veins, the whole three, with their strings and oblique veins, which are many, will be intersected by a cross-cut 150 fms. in length, in easy ground for driving—say, from 50s. to 80s. per fm. These veins have been very profitably worked for the last twenty-seven years, and a vein to the north, now called Meadow vein, on which the first power for pumping of any kind was applied to the Milwr Mine, and has not been seen for more than 60 years—consequently, there is no record of it that I can get at, and it may be fair to assume that not more than 10 fms. of this vein has been taken away below the day level; this, in connection with the other mines, is most desirable, and calls for their drainage. In addition to this, I should mention the Brynford Hall Mine, which has been purchased by the Milwr Company, and was formerly worked by a separate company, giving great profits by the drainage of the Milwr engines, and is now become their property. This combined, makes this mineral property a most valuable one, and justifies any fair and reasonable capital in unison with the great extent of mineral grant in the most desirable of the Flintshire mining district.

It will now be desirable to explain the extent of ground held under lease by you, and say that, from the Brynford estate, the north end, including Brynford Hall Mine, southward to Caea, is about 2 miles from north to south, adjoining the mountain to the west, and running into the coal measures to the east, which latter mine is situated full 700 fms. to the south of Herward workings; and although a cross-cut has been driven through the whole of this ground, intersecting from 20 to 25 veins, none of which have been proved below Roskell's cross, this level might have been considered at the time the most desirable situation, but has since been proved by the sinking of Wright's shaft, showing the shale much deeper than otherwise could have been calculated, and proves the trials at the time they were made—however scientifically proposed—to be too close to the shale for the upper part of the runs of ore, as proved at the north mines, Herward, Wolfa, Milwr, and Meadow veins. Although this cross-cut has not proved the most desirable place for preliminary trials, I cannot doubt that, if further west had been selected, the cause of the great bodies of ore already discovered, and those expected, would have been clearly shown—still I cannot recommend your spending further capital at the adit level, as it is now clear to any one acquainted with these matters that drainage should be the chief object, and I have no doubt it would be recommended by others as well as myself, to drain the mines. There is a steam-power equal to 450 horse, and capable of effectually working the mines to any reasonable depth required, and I believe only requires a small capital, skill, and judgment to accomplish this great object in the shortest possible time. Your agents on the mine say three months; but from their explanation and arrangements I should estimate less; still it is right to be on the safe side; and I think that a less amount of capital than their estimate will accomplish this great object, which I consider so desirable to the interest of the company.

It will now be necessary to give some explanation of the position of the mines as they now stand, and how they stood at the end of 1848. At this period not more than Milwr engine-shaft, Wolfa, Herward, and Caea shafts were open; all had run in, and no opening into the day level, except from them, could be found, consequently the undermentioned work had been set about in preparation for the drainage and working of the mines—viz., clearing and securing with stone the Meadow shaft, on Meadow vein, 80 fms. deep to the day level. Western shaft cleared and secured with walling 40 fms. deep on Milwr and Meadow veins. Clearing Plasbrynford whim-shaft 56 fms. deep to the level of the water ready to follow it down by drainage with the engines. Plasbrynford ladder shaft, 60 fms. west from whim shaft, has been cleared and secured 45 fms. deep, and a communication for air at this level is hoped for in a month from this time. Matthew's shaft has been cleared and secured 32 fms. deep to the water level, and a communication made to a ladder shaft 60 fms. west—shaft secured, ladders put in, and tribute ground laid open and in course of working. This part, too, wants drainage. Frith north whim shaft has been cleared and secured 32 fms., with a ladder shaft cleared and secured with ladders, &c., put in, so that this part is in course for deep working. Frith shaft, on Wepra, has been secured to a level called the 30, ladders repaired, &c., and many trials made from it by cross-cuttings and drivings on different veins; but although on this vein valuable ground has been proved at a deeper level, and worked further east, I believe these trials to be too near the surface, and they may be suspended to await deeper trials, which will soon be made. The new hard shaft, on Wepra vein, has been sunk from the 37 to the 62 fm. level, now the level of the water, and a 62 fm. level driven 40 fms. west from it, the roof and bottom yielding most of the ore obtained from the mines. This ground was very rich above the 50 fm. level, 15 fms. high to the grey limestone, but has much falled between the 50 and 60 fms., but promises to do well again when the water is drained and can be followed below the 60 fm. level. I should here mention a 50 fm. level cross-cut, already driven about 35 fms. south from the Wepra vein, and is now driving at 50s. per fm., which may very shortly be hoped to turn up something good, or from the nature of things it should do so. Worfa whim and ladder shafts on the vein has been put in course to the level of the water, and from appearances promise to do well when drained and properly worked. In the adit level a great deal of work has been done for effectually carrying off the water, and there is still a great deal to do, requiring 100*l.* or 150*l.*

Herward engine-shaft has been put in thorough repair to what is called the 112 yards level, being 30 yards below Roskill's cross-cut level; the steam winding-engine put into thorough working repair, with new crushing mill, 2 ft. rollers, ropes, &c.; the washing floors made very complete, enclosed with strong walls, &c. Wright's shaft, nearly 50 fathoms deep, has been sunk through the strata into Roskell's cross-cut level at, I presume, an expense of from 700*l.* to 800*l.*, and is now ready for sinking on the different veins before mentioned, as being discovered in the cross-cutting between Caea and Herward. This shaft is 300 fms. south from Herward, and 400 north from Caea. Henblas whim-shaft has been cleared and secured 50 fms. deep the cross-cut, cleared 222 fms. north towards Herward; many veins in sight, but it will be more prudent to see the veins deeper in the chert before I recommend further trials in this part; a ladder shaft has also been cleared and ladders put in. Caea whim-shaft has been cleared, and more than 200 fms. of levels cleared and put in course, and 12 or 15 men on tribute waiting the further drainage; a good deal more might be said on this part, which is better known to the directors than I can here describe. Taking the concern together, I find more than a mile and half of levels cleared and secured, and two-thirds of a mile of the shafts. Eighteen are good working shafts, with whims, ropes, chains, and kibbles, with 14 ladder shafts into the different workings and veins, most of which are new. The cost of doing all the work before described must be great, and might astonish a casual observer; but will not do so to a practical man acquainted with such work. This brings me to the steam-engine and other apparatus. Caea 50-inch diameter of cylinder, with 9 feet stroke and 70 fms. pitwork, as good as new, and in excellent working order, a few pounds making all ready for a start. Herward, an excellent engine, 70-inch cylinder, 10 ft. stroke, 76 fms. 18 in. pitwork, and 42 fms. 8 in. for feed water from the day level to the surface, engine complete, with some trifling repairs to the boilers. The winding and crushing-engine at this place is very complete, with all the necessary buildings, &c.

Milwr 63-inch cylinder, 8-ft. stroke, with 40 fathoms 17 in., and 30 fathoms 8 in. pitwork, an old-fashioned engine at first, has been supplied with new cylindrical boilers, about 30 ft. long, and 4½ ft. diameter, which requires a little repairing, but not much; steam-pipes and shut-off valves very good. It has also had a new beam and parallel motion, with new cylinder, and is good, with the exception of new nozzles. These will do to work again, as they are, or may be replaced with new, as your engineer may recommend. The replacing them with new will require from 100*l.* to 150*l.* I further find, in a quiet way, that a great deal is doing for putting the engines and apparatus in order, by repairs to capstans, erection of new with good second-hand pitwork, ropes, &c.; repairs in Herward engine-shaft, &c.; and from the manner, clear to me, of your engineer's report, I am led to believe he estimates the difficulties much more than he will find them to be. I should have mentioned, that the great profits made from these mines have been from chert ground workings, and that the limestone has been very little tried below the adit or water level, and not the slightest trials made below it on the following veins—viz., Plasbrynford, Brynford Estate, Mathew's Brynford Estate, Lloyd's Brynford, Frith North Wepri Estate, Frith South Wepra Vein, Wepri ditto. The workings at Plasbrynford have been formerly productive and profitable. Frith south has been laid open and profitably worked by the present company, and all these veins will be drained 40 or 50 fathoms deeper by working the steam-engines; and the 50 fathom level cross-cut, named in the report, has 500 fms. of untried limestone ground to pass through in your grant, when good discoveries may be reasonably hoped for, in a south line direct to the rich Pen-yr-henblas Mine, also in limestone. It is also clear to me, that the only true course for mining, and securing or making the adventurers capital always safe, is liberality with lords in extensive grants and fair royalties, and that such liberality should be met on the part of the adventurers with fair and liberal capital for the proper working of such mineral grants, and on this score I think both lords and adventurers have good reason to be satisfied with Milwr.

Having duly considered the extent of this concern, and the preparatory work done, I can scarcely see where money could be properly saved, even if the extent of the old workings had been better known than they were at your commencement. Again, considering that you have had to deal with so many different interests, requiring a dozen leases, forming an item in the expenditure, which could not be done without, and I must say the manner in which the lords and their agents have acted in unison with each other for the common good, the effectual working of this great concern reflects much credit on them. Untoward and unforeseen expenditure has also taken place during the present year, and returns of ore very much retarded, which has materially altered the state of your accounts up to this time, none of which could, I presume, with propriety, be foreseen or avoided. In looking at your instructions, I think I have touched on all the points there mentioned, with the exception of further working without the steam-engines. To this I would say, having spent so much in preparations for their working, which are now nearly complete, my opinion is that their working should be followed up. That from your present workings you are making some profits, there can be no doubt, but your ore ground already discovered above the levels is fast approaching the water, whilst other parts are already worked into it. If I can be of further service to you, command me.

WARLEGGAN CONSOLS.—We have not yet cut the lode in the north cross-cut; but there is a great increase in the flow of water from the end, from which we draw the conclusion that the lode is near. There is no alteration in any other part of the mine. The stamps, however, have been idle since Tuesday morning, in consequence of the water-course having broken away in a part cut through by an old stream work, and where the ground had become so weak, from the floods, that we were obliged to cut a piece of new leat. We have now got the water home, and the stamps to work.

WELLINGTON.—The lode in the 50 fm. level, east of the engine-shaft, is from 1 ft. to 18 in. wide, and has a very favourable appearance; this level is not yet driven so far east as the ore ground in the 40 fm. level; in the same level west we are driving north on the slide, ground favourable. We have just commenced sinking a winze under the 40 fm. level, east of Parcoily shaft, lode 1 ft. wide, worth for copper and tin 10*l.* per fm.; this winze is 20 fms. east of the 50 fm. level end. The lode in the 40 fm. level, east of said shaft, is at present split in two parts, and unproductive; in the same level west we are driving north to cut No. 1 lode, and, until the lode is cut in this level, we cannot sink the western whim-shaft deeper; the ore ground about this shaft continues pretty well. The lode in the 10 fm. level, west of said shaft, is 10 in. wide, principally spar. We have not yet intersected any lode in the cross-cut driving north of the western adit level. The ground in the cross-cut driving north in the adit level, towards Fisher's lode, has, during the past month, been much harder than usual. I hope this will not continue long. We are still able to sink the north shaft under the shallow adit level; this shaft stands about 9 ft. north of Fisher's lode, and I expect, 5 or 6 fms. deeper, to see the lode in the shaft.

WEST DOWN CONSOLS.—The engine-shaft is being sunk to the intended depth, 10 fms. under the adit level, and the cross-cut driven 2 fms. south towards the lode. I expect there are 8 fms. further to drive, without the lode should underlay faster than I anticipate it will. The stamps are set to work, and we shall prepare the tinstuff we have already risen as fast as possible for the market.

WEST ESGAIR LLEE.—The lode in the adit level, east of the road, is much the same as in my last, looking promising, and producing some ore, but not sufficient to set a value on, and without any further improvement. We are thinking to take the men from the end and put them to sink a winze in the bottom of the level, where we had the most ore in driving the level. The 25 tons of ore, sold to Mr. Somers, will be put on board the vessel to-day for Bristol.

WEST PAR CONSOLS.—Sarah's shaft is down 9 fms. below the adit, 32 fms. from surface; the ground is very favourable. In the northern part of the sett, in Dunkin's shaft, the ground continues as last reported. In the Vounder lode, driving east, we have now two good leaders of tin; but not so rich as last reported. Floyd's shaft is down 11 fms., and the whim-shaft is down 9 fms. We expect soon to open the lodes sufficiently to set several tribute pitches. Both engines work remarkably well.

WEST WHEAL JEWEL.—In the 70 fm. level, west of Williams's cross-course, on Wheal Jewel lode, the lode is producing stones of ore. In Carkeek's winze, in the bottom of the 70 fm. level, west of Williams's cross-course, on the same lode, the lode is unproductive. The 57 fm. level, west of Hodges's cross-course, on Tolcarne tin lode, is worth 7*l.* per fm.; the same level, east of cross-course, on the same lode, is worth 4*l.* per fm. The shallow adit level, west of Tregoning's shaft, on the same lode, is worth 7*l.* per fm. The stopes in the back of the 12 fm. level, east of Pryor's winze, on the same lode, is worth 13*l.* per fm.; the stopes in bottom of the 12 fm. level, east of Tregoning's shaft, on some lode, is worth 27*l.* per fm.; the stopes west of Tregoning's winze, in bottom of the above level, is worth 24*l.* per fm. The stopes are working on tribute.

WEST WHEAL TOWAN.—Taylor's engine-shaft is cleared to the bottom, 4 fms. under the 20 fm. level. The cross-cut from the 20 north, towards the Great Wheal Towan lode, is driving fast, at a cost of only 2*l.* 10s. per fm. No lode broken on the middleworks lode since the last report, but will begin to break early in next week. Caroline's shaft is sinking through tolerable tin ground, and will be down for a 15 fm. level in about two months. In the adit level, east from Cavern, on Taylor's lode, the ground is greatly improved for driving—lode 5 ft. wide, rich for mundic and jack, with good stones of ore, but not enough to value. The erection of stamps will be begun immediately, as all the stuff drawn from Caroline's shaft is middling good work for tin.

WEST WHEAL VIRGIN.—We are still sinking the engine-shaft by eight men, and are down from 5 to 6 fathoms under the 9 fm. level, and I feel great pleasure in informing you that the lode is daily improving as we get in depth; it is now producing very good stones of tin of the best quality—in fact, it is now much better than it was at my last report. We still continue to work in the 9 fm. level, west of the engine-shaft; here we have a good lode of tin going west in whole ground. All that is required in this mine, so as to bring her into a profitable paying state, is to continue sinking the engine-shaft without delay, and extend the levels east and west on the lodes; by so doing, a great deal of valuable tin ground will be laid open, which can be worked at very moderate tribute.

WHEAL AUGUSTA.—The men have been engaged this week in cutting down the engine-shaft, fixing the lift and the rods. The horse-whim is erected, and a suitable engine attached, capable of draining all the mine for the next 10 fms. sinking. The engine went to work on the 24th inst., to the satisfaction of all parties who assembled to witness the same. We are now sinking a winze under the 8 fm. level to the west of the engine-shaft, and the lode is 18 in. wide, and very good for tin; we have also set a tribute pitch to the west of this shaft; the lode is looking well. The masons are progressing very well in building the account-house, sampling-house, and smith's shop.

WHEAL HAMLYN.—Since my last report we have broken very rich specimens of yellow ore, and also tin; the lode is going larger, and looking better.

WHEAL HARRIS.—In the cross-cut in the 25 fm. level south we have intersected another part of the lode, which makes it in size altogether about 2½ feet wide, underlaying south about 4 ft. in a fm., composed of spar, lead, mundic, copper ore, &c. I have ordered the men to drive west on its course, to get under the shoot of ore that we saw in the costeaning pit at surface, as I am of opinion that in driving from 3 to 4 fms. those two parts will come together, and probably make a good deposit of ore at the intersection.

WHEAL MARY ANN.—The lode in the 70 fm. level, north of Pollard's shaft, is 2 ft. wide, and worth 8*l.* per fm.; in the same level south it is 2½ feet wide, and worth 9*l.* per fm. The lode in the 60 fm. level, south of the shaft, is 2 ft. wide, and worth 10*l.* per fm. The lode in the winze sinking under the 60 fm. level, south of the shaft, is 4 ft. wide, and worth 16*l.* per fm. The lode in the 50 fm. level, south of the shaft, is 2 ft. wide, and worth 6*l.* per fm.; the lode in the winze sinking under this level south is 2 ft. wide, and worth 9*l.* per fm. The lode in the 40 fm. level, south of the shaft, is as last reported. There has been but very little done in the 70 fm. level, south of Barratt's shaft, since last reported, in consequence of Trelawny agents damming up the water. The lode in the winze sinking under the 60 fm. level, south of Barratt's shaft, is 4 ft. wide, worth 12*l.* per. The stopes are usually productive.

WHEAL PENHALE.—The north end, 40 fathom level, has a much better appearance than on last report day; the lode is very large, and producing good stones of ore—this end is getting into a more congenial strata than heretofore for mineral. In the south end, 40 fm. level, we are now passed through the hard ground (elvan), and have got into a very good strata of killas; and the lode in this, the soft ground, although of great magnitude before, is getting very considerably wider, and producing very fine stones of lead and copper—in fact, it is well impregnated with ore throughout. In taking down the lode in the winze yesterday, on the caunter, a very decided improvement was met with; this lode as we develope it in depth, and get below the slidy ground, which above interfered very much with its good appearances, is widening to a material extent, and the leader of lead and copper, nearly solid, is 8 to 12 in. wide. A stone has been hauled to surface from this winze to-day of little else than solid ore, weighing 248 lbs., principally lead. I find no important change in the tribute pitches.

WHEAL PROVIDENCE (South Sydenham).—The workings have been resumed in the adit end east, and the lode is as kindly as ever, and has every appearance of being near a cross-course. The engine-house is up to take the cylinder, and the buildings are being proceeded with as rapidly as possible.

WHEAL RUSSELL.—The engine-shaft is now down to the 48 fm. level, and we shall now set the cross-cut to drive south to the great lode, which we expect will be 5 or 6 fms.; and as the south lode, from which the whole of our ores is now produced, falls into this lode, between the 37 and 48 fm. levels, we naturally look with some interest to the lode when cut at this (48 fm.) level. The 38 fm. level east is still looking well, about 2½ ft. big, producing about 3 tons of good ore per fm. In the winze sinking below the 37 fm. level, the lode is 2 ft. wide, turning out about 2 tons of ore per fathom; a small cross-course has lately intersected the lode, which somewhat disordered it; but it is again resuming its ordinary appearance; in the 37 fm. level north, west of engine-shaft, the cross-course is divided into two parts since we have cut the great lode, and between which a piece of lode is now showing itself, producing good stones of ore. The lode in the 26 fm. level, west of engine-shaft, is not looking quite so well, as it is not quite so large. A small branch has been met with in the cross-cut at the 16 fm. level, but not of much importance. The pitch in the back of the 37 fathom level is still looking well, turning out 3 tons of ore per fm.; no alteration in the other pitches. We sampled on the 23d inst. 42 tons 5 cwts. of ore.

WHEAL SARAH.—We are driving east on the great east and west lode, 7 feet wide, and it is looking much better than a week ago. I never saw such a kindly speculation; one part of the lode is now very soft, and produces malleable and black ore, where before was none; the north part is still better—more grey ore than ever.

WHEAL TOM.—We are getting on with all dispatch, and will send you a full report of our proceedings next week. I have forwarded you a splendid stone of tin from our main lode.

WHEAL VINCENT.—Since last report, there is little or no alteration in our west end; the lode is about 2 ft. 6 in. wide, very good for tin, with easy ground, which has been driven for 1*l.* 10s. per fm. We are also driving east to meet the slide, which will be about 12 ft.; there is a good lode in this end 2 ft. wide; this lode was heaved at the point of the slide, according to its present course, 9 ft., which was about 4 ft. where we cut it after driving 12 ft. in the granite. We have our new machinery at work to sink below the 10 fm. level; it works well, and the connection of the new branch rods is worthy of any engineer's inspection. We are now in a fair way of sinking to the 20.

FOREIGN MINES.

COPIAPO MINES.—Mine report, dated Tres Puntas, 24th October:—

Copper Mines—San Pedro.—In the beginning of the present month we communicated the winze sunk from the working of a former party with the cross-cut below, and have, consequently, commenced stoping away some of the backs, where we have a lode 18 in. wide, and it is yielding ore of a superior quality.

Checo.—During the present month we have had little or no alteration. The lode in the 20 fm. level, to the east of Harman's shaft, is from 3 to 4 feet wide, with a leader, or branch, of 20 in. of very rich ore. The stopes are looking much the same as last month, and producing ore of from 30 to 35 per cent.

La Compania.—In this mine we have sunk our shaft to an 18 fm. level, and have commenced driving east on a lode 3 ft. wide, composed of gossan, copper, spar, and iron, and a more kindly-looking lode I have seldom seen, and we expect a good bunch of ore as we proceed eastward; from the bottom of the level above there is a fine branch of ore gone down. In the 10 fm. level east the lode is split into branches, and at present we are driving a cross-cut north, in search of another part. The stopes continue to yield well.

La Reyna.—In this shaft we have a large good-looking lode, which has been composed of gossan and iron; it is at present, however, changing in its character, and is giving beautiful stones of ore, of from 28 to 30 per cent. I think before long we shall have a splendid course of ore. We have, during the present month, broken but little gold, owing to the illness of one of our English miners.

Flamenco—San Augustin.—In the shaft which is down 7 fms. we have a very large lode, principally composed of gossan. In the adit level west the lode is also large, with a good branch of shippable ore to the north; both the shaft and adit levels hold out such features as to warrant one in supposing that we may fairly expect a large and lasting bunch of ore.

San Carlos.—In the upper level we have a lode 2 ft. wide, producing stones of ore. In the lower or bottom level we have cut the lode, and opened 3 fms. on it; it is from 2 to 2½ feet wide, producing a little ore in each of the above-named levels; our object is to get into the hill, so as to be under some good ore ground not to be seen in the old workings of the former party; and when this is completed, we may fairly hope to be amply repaid for the outlay.

Produce for September—Checo			*Tons* 20
,,	,,	San Pedro	10
,,	,,	La Compania	10
,,	,,	La Reyna	6
,,	,,	San Augustin	6—52 tons.

Silver Mines—Al Fin Hallada.—In the 5 fm. level the lode is 1 ft. wide, producing ore of an average quality. In the 15 fm. level the lode is from 2 to 2½ ft. wide, with a good branch of ore. In the 20 fm. level the lode is at present split into small branches. In the 25 fm. level the lode is 3 ft. wide, very rich, and in the Pique the lode is 2 ft. wide, showing evident signs of becoming shortly the most productive part of the mine; also in a labor to the north the lode is 4 feet wide, and giving rich stones of white silver. This labor has a pretty appearance, and I think, before the end of another month, will be very rich. There will be ready for removal by the end of the month from 14 to 15 cajones of ore, of about 250 mcs. per cajon (4500 mcs.=900*l.*) I have never seen the mine looking so well as at present, and more particularly so in the bottom.

San Jose del Carmen.—Our progress here is rather slow, owing to the scarcity of hands; however, we continue to take out a little low quality ore.

Merceditas.—Our shaft is down to the 25 fm. level, and we have commenced driving on a well-defined lode, although at present poor; in the 25 fathom level south from the chiflon the lode is 18 in. wide, composed of a beautiful quartz, with sprigs of white silver—still not rich enough to pay the heavy carriage to Copiapo. In each of the other labores we have a good-looking lode, and more especially so in the one going north, which is now getting very near some cross lodes, which we hope will give it not only an improved appearance, but rich silver ore.

Carmen Alto.—In this mine we have nothing new, our operations being confined to the driving of the 16 fm. level (in which the lode is 2½ feet wide), and to the sinking on a lode which occasionally gives stones of good ore, but, I am sorry to say, not in very large quantities.

Santa Ana.—Our operations here have been confined to sinking in the two bottom labores, and where we have been raising some good ore. The lode in each labor is from 4 to 8 in. wide, and although not so rich as I could wish, yet it continues to give ore of good quality, and we shall, as we proceed, no doubt lay open some good ore ground.

Colorada.—In the chiflon going north we have a lode 18 in. wide, composed of quartz and killas, with spots of metal frio. In the levels both north and south the lode is 2 ft. wide, precisely of the same character as the chiflon below.

Gold Mines—Descubridora de Oro.—During the present month we have been opening ground of a fair quality, both for gold and copper ore, but at present the levels are not looking so well as they were a month since; however, we expect an improvement shortly, from indications seen above. We have raised a few cargas of gold, with 2 tons of copper ore, in the present month.

Santo Domingo and Segunda Esperanza, for the present, are suspended, not having any men to spare for them at the present time; three of our English miners are in the city sick, and I have never before witnessed such a scarcity of native labourers. A remittance of 1034 mcs. of silver and ingot of gold (220*l.*) has been received.

IMPERIAL BRAZILIAN MINING ASSOCIATION:—

Bananal, Oct. 13.—I have much pleasure in stating that we have had a much improved produce during the last 10 days. The stopes in the back of the 24 fm. level have given us several boxes of work for the washing-house, which yielded 7 lbs. 8 ozs. 10 dwts. and the vein still looking well. We have also had a tolerable produce from the back of the 7 fm. level, amounting to 10 lbs. 10 ozs. 2 dwts., together, from the washing-house; or, with the stamps' gold, 20 lbs. 5 ozs. 1 dwt. for the 10 days. This intelligence I think you will be pleased with, particularly the result of two or three days working in the back of the 24, from whence I see no reason to doubt of good and regular returns. We shall use every effort to get down to another level—say, the 34—as quick as possible, that we may have other ground to operate on previous to that now laid open being exhausted; in fact, we are all in good spirits with regard to the prospects now presented. You will please observe by the captain's report that the produce from the 24 has been obtained from the Big Pump vein, and not from Thomas's vein; the latter we have always considered the principal one, and at which we are at present driving to get under the run, or direction of the shoot in Thomas's shaft; and, as the distance cannot be great, judging from its course above the 14 fm. level, this will soon be accomplished, and then we shall immediately begin stoping on it from the back of the 24, towards the bottom of Thomas's shaft; the latter is a point of the mine I have never seen from the shaft below, the 14, being always full of water. In the other parts of the mines the operations go on with their usual regularity; the masonry of the pits for the new wheel and bob is drawing to a close. I think ten days or a fortnight more will finish it—it is an excellent and substantial piece of work. Gongo calls for little remark; I was there last week, and found the carpentary work for Joinville's new stamps was in a very forward state; the produce for the last ten days has been small, but there has been a scarcity of water to work the stamps, which will in some measure account for it; the jacotinga, however, supplied, has been poor, although the greatest part was taken from the heart of the old mine.

P.S.—I have now the unpleasant intelligence to communicate of the breakage of the new millier made a short time since by Mr. Monlevade for the iron wheel, which happened since the foregoing letter was written. The 24 fm. level will be under water during the time it will require to repair it, or get another made. I cannot yet say what means will be adopted, but as soon as the breakage is taken out from the axle, it will be decided on, and immediate steps taken accordingly.

Gold Report.

Bananal—from 4th to 8th October	*Lbs.*	10	2	4	0			
,, ,, 9th to 12th ditto		10	2	17	0	20	5	1 0
Gongo—from 4th to 12th ditto						1	11	7 0
Together	*Lbs.*					22	4	8 0
Total from 1st July to 12th Oct.—Gongo	*Lbs.*	37	10	18	0			
,, ,, Bananal		72	1	0	0	109	11	18 0

LINARES MINES.—The following has been received from Mr. H. Thomas:

Linares, Dec. 14.—In San Anton winze, the men having completed the distance named by Capt. Curry in his monthly report (7th inst.), we have commenced to drive east and west; the lode at present contains occasional bunches and stones of lead, and we are expecting considerable improvement as we extend this, our bottom, or 56 fm. level, eastward as well as west, to get under the good ore ground about Wilson's shaft, and still more to the west. In Wilson's shaft the lode has a little improved, being worth about 5 tons per fm. It still continues rather hard. We have set Shaw's shaft to sink under the 45 at 300 reals per vara, and 1½ real per arroba for lead, the takers paying the dressing cost of ½ real per arroba; the lode is worth about 2 tons per fm. In the 31 fm. level, driving east, we are still opening a good lode, worth from 2 to 3 tons per fm. Our tutwork operations offer nothing worthy of notice; but I am much pleased to observe, on an inspection of our new pitches, that they are turning out better than we anticipated. I am much gratified that the association has resolved on smelting at the mine, and I shall immediately determine on the site for the furnaces, and make the necessary arrangements with the masons by contract for the work.

Account of ore:—Ore in stock at Linares, Dec. 7, 128 tons 1 cwt.; weighed in Dec. 14 28 tons 11 cwts.=156 tons 12 cwts.—sent for shipment, 4 tons 6 cwts.; remaining at Linares, 152 tons 6 cwts.; ditto at Baylen, 14 tons 14 cwts.; ditto at Seville, 65 tons 18 cwts.; ditto at Malaga, 59 tons; on board ship, 126 tons 10 tons.—Total, 418 tons 8 cwts

ROYAL SANTIAGO MINING COMPANY:—

Cobre. Nov. 18.—*Perseverancia.*—During the past fortnight Thompson's shaft has been developed 2 fms.; the lode is composed of yellow-coated copper, interspersed with arsenical pyrites and quartz; there is no alteration in its size since last reported—yielding 4 tons of lead per fm. East from the shaft, from the 10 fm. level, the lode is from 5 to 6 feet wide, interspersed with yellow copper pyrites, a portion of which is saved for dressing—yielding 2½ tons of ore per fm.; the stratum is compact greenstone, disseminated with carbonate of lime. The lode in the winze east from the shaft, developing between the 10 and 20 fm. levels, is from 8 to 9 ft. wide, and the south wall has not yet been seen; it is composed of yellow copper and arsenical pyrites—the latter in abundance—a portion of which is saved for dressing; the stratum is compact and hard greenstone. West from shaft, in the 10 fm. level, the lode still continues in a disordered state, being very compact and hard. The lode in the stopes west from the shaft, between the adit and 10 fm. levels, east and west from No. 2 winze, is without alteration. East, at the deep adit, the lode is unproductive; it is suspended, and we have placed the men to develope a winze in the bottom of the said level; the lode is from 1½ to 2 ft. wide, composed of black and grey ore—yielding 3 tons of ore per fm.; the stratum has favourable indications. The lode in the stopes, in the back of the adit west from cross-cut, is without alteration. The stratum in Goldsmid's shaft continues favourable for developing, and we hope to effect a communication with Great St. David's adit level during the next fortnight. The lode in the adit west from shaft is without alteration.

Fortitude.—In the end driving west from adit, in the south lode, we have intersected a cross-course; it has kindly indications, and is disseminated throughout with particles of yellow copper pyrites.

San Joaquin.—We have excavated a landing plat at Taylor's shaft, at the deep adit, and have commenced to develope the shaft below the said level. The lode in the winze between the shallow and deep adit levels, is unproductive; it is, consequently, suspended until further trials be made at the 10 fm. level leading towards Taylor's shaft.

San David.—The stratum in the cross-cut excavating south, at the adit level, is favourable, and we hope to effect a communication with Goldsmid's shaft within a fortnight.

Recurso.—The winze developing west from the shaft, between the 26 and 33 fm. levels, is communicated with the latter level, and we have let the lode to stope west from the said winze at 8*s.* per yard; the lode is from 2½ to 3 feet wide, composed of tile and red oxide, yielding 4 tons of ore per fathom.

Angelita.—The stratum in the adit excavating south is composed of gneiss and carbonate of lime—the latter in abundance, being very compact and hard.

WHEAL ARTHUR MINING COMPANY.

At a special general meeting of adventurers, held at the offices, White Hart-court, Lombard-street, on the 24th inst., the report from Capt. J. Spargo, and the position of the mine, having been fully discussed, it was resolved—

That, in consequence of the recent discoveries in this mine, showing that much less capital will be required than was at first anticipated, a deposit of 1*l.* per share only be taken on the sale of the shares yet undisposed of, and that those parties who have paid more shall have an additional number equal thereto, and that the shares unsold be first offered to the present shareholders at the above price.

The report of the captain was then read as follows:—

I am happy to inform you that we have got through the reservoir shaft, and met with the great cross-course, in which the timber is broken down, and we are obliged to put in more, and clear out the rubbish, which I hope will be done by the end of the week, and then we shall go direct to the engine-shaft. The men are still raising good stones of ore from the back of the level.

The prospects of the mine were considered so highly satisfactory, that the adventurers present expressed their confidence that the remaining shares would soon be all taken up, under the new arrangement.

WHEAL CREBOR MINING COMPANY.

The two-monthly meeting of adventurers was held at the offices, St. Helen's-place, on Monday, the 23d inst.,—Mr. Sheriff Hodgkinson in the chair.

The statements of accounts were in the usual comprehensive and complete form, detailing every item of expenditure, and showing a balance of 139*l.* 18*s.* 9*d.* in favour of the mine, and, after discharging all liabilities, leaving a surplus of 48*l.* 4*s.* 8*d.* The mineral grants from the Earl of Devon and Mr. Rice were confirmed, and a call of 10*s.* per share made.

The following report, from the committee of management, was read:—

It will be remembered, that at a general meeting of adventurers, held on the 16th May last, the committee were authorised to apply to the Earl of Devon and other parties, for the grant of a mineral lease of their lands inclnded within the general limits of the Crebor sett. The committee took several opportunities of making such an application to his lordship's trustees, but were always met by a demand for a premium, in addition to the usual dues. The committee did not then consider the grant of sufficient importance to justify their agreeing to give a premium, but during the last two months circumstances have unexpectedly arisen, which have brought the question to a definitive shape, and the committee have the pleasure of stating that they have succeeded in obtaining a satisfactory arrangement for a mineral lease of Lord Devon's land for 21 years, at 1-15th dues and 50*l.* premium. The committee have also obtained a letter of license for searching for minerals in Mr. Rice's land. These necessary negotiations have interfered with the operations at the eastern part of the mine, but in future the works will be proceeded with without interruption. The reports of the monthly inspector and the resident captain will show that the prospects at the western parts of the mine have improved, and are likely to continue to do so. The ore sold on the 21st November amounted to 23 tons 1 cwt. 2 qrs., of an average produce of 5½, and realised 79*l.* 11*s.* 11*d.*, or 3*l.* 9*s.* per ton. This ore having been taken from the ground left open by the old company of adventurers, could not be expected to be very rich, but future sales will doubtless show that the ground laid open by the present company will turn out ore of a higher produce. It need only now be mentioned, that a pitch in the 40, west of Rundle shaft, has been let at 6*s.* 8*d.* in 1*l.*, while other pitches will soon be let at moderate rates. In order to carry on the works efficiently, the committee recommend that a call of 10*s.* per share, payable on or before Tuesday, the 7th Jan., be this day made.

The following monthly inspector's report, dated Devonshire Great Consolidated Copper Mines, December 21, was then read:—

I yesterday inspected the Wheal Crebor, and beg to hand you my report of operations during the past two months for your meeting of the 23d inst. The 54, or adit level, west of Rundle shaft, has been driven 5 fms., the lode throughout, for this length, is rather small, being 15 inches wide only, composed of capels, spar, mundic, peach, and occasionally stones of ore. The lode in the present end is of less size, and for the present unkindly, being composed of capels, intermixed with killas; it is thought, however, that the main part is to the north; this end should be suspended for the present, and the men put to sink a winze from the 40 fm. level for the purpose of opening out pitches and ventilating the 54 fm. level drivage. Some fathoms of this level (the 54), the cross-cut and plat have been stoped and made complete to Rundle shaft, which admits of the stuff being wheeled with more advantage and less cost than heretofore. The 40 fm. level, west of Rundle shaft, has been driven 9 fms.; and the lode, averaging 18 in. wide, is very kindly, being composed of capel, mundic, and ore; the lode in the pitch in the back of this level, is now being wrought on at 6*s.* 8*d.* in 1*l.*, although of less size than it was in the back of the level—is exceedingly kindly, being composed of a light capel, mundic, and ore; the lode in the rise, in the back of this level (the 40), for the whole height, 11 fms., is of an uniform general character, being disordered, carrying however capels, mundic, spar, and in places good stones of ore. A 30 fm. level is now being driven west from this rise, and already advanced about 5 fms.; the lode here, also, is of the same character as that in the rise. Some considerable distance has yet to be driven to come back over the orey ground gone through in the 40 below. The cross-cut in the 20 fm. level, south of Gill shaft, has been extended 3 fms. Nothing of importance has yet been met with; the ground in the present end, however, is easier for progress, and more mineralized. In the 24 fm. level, east of the cross-cut, at Cock shaft, on the south lode, little or nothing has been done, it being thought from the dialling not to be the same lode as that in the 12 fm. level above, and the men are now engaged taking down the western side of the cross-cut for proof of the same. The 12 fm. level has been extended 3 fathoms, and the lode throughout is about 2 ft. wide, and kindly, containing capels, mundic, peach, and ore; the lode in the present end, however, is not looking so well, being composed of less capel, and intermixed with killas. Nothing has been done in the clearing of the adit level, or Murchison's shaft, since my last advice, owing to the reason therein stated, I examined the tribute ground in this part of the mine from the 24 fm. level upwards, and am opinion, that after the same, together with the back of the 40 fm. level west of Rundle shaft, is brought into a regular and safe course of working, about 25 tons of ore can be broken every two months.

The usual vote of thanks was passed to the chairman, when the meeting separated.

WHEAL GOLDEN CONSOLS MINING COMPANY.

A meeting of adventurers was held at the Golden Lion, Barnstaple, on the 26th inst. William Thorne, Esq., in the chair.

The purser (Mr. J. D. Young) produced the accounts, which showed—Balance in hand at the meeting in October last, 591*l.* 6*s.* 6*d.*; ores since sold (deducting dues), 1343*l.* 11*s.*=1934*l.* 17*s.* 6*d.*—The costs for Oct. and Nov. were 690*l.* 10*s.* 1*d.*, which left a balance in favour of the company of 1244*l.* 7*s.* 5*d.*

The Chairman congratulated the adventurers that the period had arrived when they could commence making dividends. It was anticipated this would have taken place at their last meeting; but the directors had considered it prudent to erect a new hydraulic engine for raising the water from the 77 fm. level, to construct sheds over their dressing-floors, and for the purpose of avoiding the extra costs of winter freights, to supply to the mine the fuel and timber that would be required till May next. They had 40 tons of unsold ores on their floors; and, as their captain's report stated, "the mine never looked so well as at present," he (the chairman) considered a dividend might be calculated on at their succeeding bi-monthly meetings; and concluded by moving "that a dividend of 1000*l.* be declared payable on the 1st Jan. next," which was seconded by J. G. Maxwell, Esq., and unanimously carried.

WHEAL AUGUSTA TIN MINE.

Sir,—I observe in the Journal of the 21st inst. a statement from "A Constant Reader," wherein he says that Wheal Augusta is an exceedingly small affair, not many fathoms deep, with little materials except a small water-wheel, which has not been working a month, if it has at all; also, he says he presumes that he knew every mine of importance in the locality. Now, Mr. Editor, I beg to say that I am managing agent of the mine, and wishing to see fair dealing respecting mines, I request the insertion of the following brief reply:—In the first place, I would say this valuable sett is granted for 21 years at 1-18th dues, and extends for several hundreds of fathoms on the course of the lode; secondly, the engine-shaft is 22 fms. deep from surface; and, thirdly, there is no water-wheel on the mine belonging to the adventurers, neither did they ever contemplate erecting any, as there is a horse-whim on the mine, with a suitable engine attached, which is capable of draining the mine for a considerable time. There is an account-house, sampling-house, and smith's shop in the course of building. We began to work this mine in April last, and have expended more than 220*l.* in clearing and securing the adit level upwards of 100 fms. in length; cleared and secured four adit shafts; also cleared the engine-shaft 22 fms., the western shaft 12 fms., and the eastern shaft 7 fms. I would also say, from the extent of tin ground already laid open in the bottoms, that the adventurers contemplate erecting a steam-engine, and also attaching stamping apparatus to the same. I should say let the writer visit the mine once, and I shall be most happy to accompany him underground, when I would show him a splendid course of tin, that cannot be equalled in many mines. Before I conclude, I would recommend him to sign his name to his future communications.—John Carthew: *St. Just, Dec.* 24.

MINING IN ST. JUST.

Sir,—A few words in reply to "A Constant Reader." Tradition has it, that "more than 100 years ago, a certain mine was worked in St. Just, called Bosworlas Moor. The adventurers sunk under the adit about 20 fms., and returned immense quantities of tin. A dispute having arisen between the lords, the mine was abandoned, and a lode of tin left in the bottom, very rich. So much for tradition. Now for facts; about April last a party undertook to test the truth of this tradition, and license was obtained to work the sett. It was proposed at the first to call it West Victoria; as, however, the sett adjoined the famed Balleswidden Mine, which had returned so much, it was subsequently determined to emulate its richer neighbour, in name at least, and it was called South Balleswidden, with Capt. Carthew as managing agent. My attention was attracted to this promising speculation, and I took up every share I could procure—a plan I should always follow when recommended by that veteran captain. Well, then, the adit level and undershafts were cleared up about two months since, and, to our entire satisfaction, *we found tradition true.* Upon this, without consulting the dear public on the subject (as we required no aid from that important personage), and adopting a practice not uncommon in England, upon a sudden acquisition of wealth, we took the liberty of doing as we pleased, and, to compliment one of the adventurers, expunged the title South Balleswidden from the cost-book (which had never been signed), and christened our "very small affair," but pretty little bantling, the Wheal Augusta. Of the valuation of her in the *Mining Journal* at 12,000*l.* I know nothing; I know, however, from Capt. Carthew and others, as good judges as "A Constant Reader" can be, quite enough to induce me to refuse, for my interest in the mine, anything below the estimate, so wondered at and complained of by him.

"A Constant Reader's" object seems to be purely patriotic; I hope it is so. But as the conclusion of the letter in no way applies to Wheal Augusta, he must excuse me if I tell him plainly, that it is unjust to interweave general cautions, by way of inuendo, in a public journal, in the treatment of a *particular* subject, because it is more than probable that wrong inferences may be drawn from insufficient data, and the readers of insinuations may not, perchance, peruse their annihilation. Permanent injuries are often thus anonymously inflicted, which are beyond the reach of the usual remedies, and the masked foe has not even the satisfaction of witnessing the punishment he inflicts if deserved, nor of making restitution if otherwise.

City, Dec. 26. Matter-of-Fact.

THE MILWR MINE—THE TALACRE MINE.

Sir,—Either you, or your correspondent, has made a mistake in your last Journal regarding an alleged discovery made in this mine,—such not being the case; I presume it must mean Talacre Mine, on the property of Sir Pearce Mostyn. If so, I believe your statement to be perfectly correct. A. F.

Milwr Mines, Dec. 23.

The German Mining Company.—The action, "Burmaster *v.* Norris," as directed by Vice-Chancellor Knight Bruce, to recover money had and received, and on account stated, occupied the Court of Exchequer the greater part of Saturday last, but the facts presented few features of general interest. The plaintiff, a public officer of the London and Westminster Bank, sought to recover 12,000*l.*, which had been advanced to "the German Mining Company," of which the defendant is the official manager, and which was formed to work certain mines in the Grand Duchy of Nassau. The affairs of the company became embarrassed; but, as it was necessary, in order to retain their interest in the mines in question under the mining laws of Germany, that the works should not be abandoned, the advances, as contended for the plaintiff, were made for that purpose to the directors of the company, and also to enable them to wind up the affair.—Mr. Crowder, for the defendant, who represented the shareholders, contended that the directors of the mining company had no power to borrow the money in question, under the Deed of Settlement. The deed, he urged, gave no powers, either express or implied, to the directors to borrow money.—The learned Baron left it to the jury to say whether on the facts it was necessary to borrow the money for the purpose of carrying on the mine; whether it had been advanced on the credit of the company—that is, to the company as principal debtors; and, lastly, whether it had been borrowed for the

more advantageous winding-up of the concern. The jury retired at an advanced hour; and, after an absence of three quarters of an hour, returned into Court with a special finding, that it was necessary to borrow all the money, excepting 4200*l.*, for the purposes of the mine, and that the balance was so advanced on the credit of the company. Verdict for the plaintiff—Damages, including interest, 8474*l.* 14s.

THE NORTH BRITISH AUSTRALASIAN COMPANY.—The "Accountant" employed by certain of the proprietary to investigate the affairs of this company, has addressed a letter to his co-partners, the contents of which are certainly not very flattering to the directors. It seems that, after toiling through ten years of accounts, relating to transactions at home and abroad, the writer applied to the secretaries to clear up certain obscurities on which the books threw no light. Neither secretaries nor directors, however, responded very cordially to his application, and from inquiry he went on to remonstrance, and his complaints being still treated with supreme indifference, if not contempt, from remonstrance to publication. His pamphlet is assuredly not calculated to soothe the feelings of the directors or any of the other functionaries of the company under their present difficulties, since it presents about as tangled a skein of mysteries as ever perplexed the faculties of any board. The purpose of the writer seems to be to show, and as figures go he does show, that the directors have never understood the real position of the company, and that they committed the blunder, soon after operations were begun, of paying dividends when there were no profits, and not likely to be any; and when the under current of interest was running against the company from properties purchased but unpaid—a fact further demonstrated by the writing off of losses up to Dec., 1844, of 56,589*l.* 15s. 1d., being just the odd 6589*l.* 15s. 1d. more than the paid-up capital of the company. According to this scrutinising accountant, the accounts have been excessively cloudy and obscure throughout, being kept in a manner which defied even his practised habits of investigation; while, unfortunately, the results, in no degree, compensated for the mystery in which they were enveloped. The losses in Australia are briefly summed up as the result of bad management, improper laws, and bad securities—three ingredients, sufficient to try the resources of a far better managed company than this appears to have been. For the details those interested should consult the pamphlet itself; and if, in addition, they will peruse the two communications recently published by us on the doings at Kaw-aw, we imagine they will be able to form a tolerably correct notion of the present position of the company, difficult, as it may be, to discern all the steps of the process by which so hopeful a consummation has been arrived at. Perhaps the meeting announced for Thursday last may tend to enlighten the public on these and other points, and more especially as to the mode by which more money is to be raised, for that is, doubtless, just now the one thing needful to extricate them from the difficulties pressing upon them.

MINING IN WESTMORELAND.—The Caldbeck Fells have a number of veins intersecting them, containing silver-lead and copper ores; but excepting the Old Driggeth Mine, now called Sandbeds—the Roughtengill and Silvergill Mines for lead, and Haygill for copper—no extensive workings have been effected, although many trials have been made, and proved worthy of notice. The Roughtengill and Silvergill Mines produce a great variety of ore, both lead and copper—the former much preponderating; but the copper raised is of rich quality. The average of silver to the ton of lead is about 25 ozs. They are now raising 40 to 50 tons of ore per month. Some specimens from the mines in this locality have, we understand, been forwarded to the Exhibition of 1851—being the produce of the four northern counties.

We understand that proceedings have been taken in Chancery against the proprietor and present workers of Bryntail Mine. The claimant, it appears, had a grant of the mine from the proprietor previous to the present workers entering upon the property, in consequence of which these proceedings are instituted.

MINING IN CARDIGANSHIRE.

At CAEGYNON, the lode in opening westward continues to improve, and is now yielding from 12*l.* to 15*l.* worth of rich silver-lead to the fm. A 16-feet wheel, 3 ft. in breast, with crushing mill, have been purchased; and these, with the necessary dressing apparatus, will be ready to work by the middle of February.

At ALLT-Y-CRIB, the 28-ft. wheel, 5 ft. 6 in. in breast, with the 30 in. crushing-mill, were started to work on Saturday, the 14th inst.; and I have not seen finer machinery in any part of the kingdom. She will not, however, be idle for the want of stuff for crushing for some time—the ore flooring being completely filled before she started to work, and great quantities adding to it daily from the present ground stoping and driving. The lode in the deep adit west is worth 30*l.* per fm.; this is leaving a back of nearly 70 fms. in whole ground. The stopes over the deep adit are worth 12*l.* per fm., and the air shaft 15*l.* per fm. The ore ground laid open will last for many years without sinking a fathom, and will leave a very large monthly profit to the shareholders.

At BRONFLOYD, the lode driving east is daily improving, and is now worth 16*l.* per fathom.

At EGGAIR-HER, the lode in the side of the adit level is worth 30*l.* per fm.

At EAST DAREN, the lode in the 20 fathom level, going back north-west, is yielding 25 to 30 cwts. of ore per fm. The lode has again improved in the 10 fm. level east.

At CEFN BRUNO, good ore has been cut in the adit level east.

In CWM ERFIN, the 30 fm. level east is yielding 15 cwts. of ore per fathom. The 20 east is small, with a little ore. The engine-shaft is preparing to sink below the 30 in a good course of ore.

In the NANTEOS MINES, the levels and stopes continue to produce from 10 to 15 cwts. of ore per fm. In the 20 fm. level the lode has improved, and now yields 1 ton per fm.; the lode is 2 yards wide, and of a very strong appearance. This level is 25 fms. in advance of the 30.

MINING NOTABILIA.

[EXTRACTS FROM OUR CORRESPONDENCE.]

CWM DAREN is situated in the Bwlch Cwm Erfin Valley, on the Daren lode extending from Francis adit in Daren Mine, half a mile eastward, and, from the character of the lode where it has been seen (being composed of rich silver-lead and copper), bids fair to become one of the most valuable properties in Cardiganshire. There is, at all seasons of the year, a sufficient supply of water for all purposes. A wheel-pit had been completed, and it is intended to erect a wheel sufficiently powerful for sinking the mine to a depth of 60 fms., and crushing the lead and copper. We have commenced operations by opening on the lode in the level Copper, where we are breaking down some good stuff for crushing; this will be carried on until our machinery is completed; we shall then sink an engine-shaft in the valley to a depth of 20 fathoms, and drive east and west on the lode; at this depth the ore seen in Francis's adit in Daren, from the dip as seen from level Coed to Francis's adit, will have reached this ground; and, according to all appearances, will be of a much richer nature than where it has been seen in the Daren hill.

MINERAL COURT MINE (St. Stephens).—We understand there has been an important discovery here, a pare of tributers working in the back of the adit, near the eastern shaft, having opened upon a new lode, which forms a caunter to the present lode. This lode has widened from 3 to 5 ft., and contains rocks of excellent tin work, the whole of the lode being fit for the stamps. We also learn that another pare of tributers have cut into the new lode about 5 fms. below the first discovery, and find it equally productive. This caunter lode is nearly perpendicular, and runs, with a bearing of 23° east of south, from the old lode towards the south lode, 70 fathoms apart. There were 5½ tons of ore sold from this mine last week, realising 57*l.* per ton. We learn, by later communications, that they have cut 5 feet through the lode, at the 40 fm. level, producing good stamps' work—the last 3 ft. very good tin—but have not yet taken the south wall, which in the upper levels was the most productive part of the lode.

NAP DOWN CONSOLS.—Having business at Combmartin, I was induced to visit the mines in the neighbourhood, and was rather surprised to see such splendid specimens of silver-lead ores raised so near the surface, not more than 7 ft. deep—stones of rich ore, varying from 20 lbs. to 3½ cwts. I think there is every probability of Nap Down Consols Mine being equally as productive as the celebrated Combmartin Mine, which is about 400 fms. south-west of the former. There is a powerful steam-engine erected on the combined principle, by Mr. James Sims, a 50-inch and 26-inch cylinder, with the necessary appliances to command the operations on an extensive scale. Materials are being brought into the mine, and preparations making to immediately commence operations. The facilities that the locality affords in the transit of the ores and materials, combined with such extraordinary prospects before the proprietary, certainly deserve a spirited and unremitting trial—J. CARPENTER: *Combmartin, Dec.* 26.

DEVON AND COURTENAY CONSOLS.—In the *Mining Journal* of Saturday last, it was stated that at the Devon and Courtenay Consols meeting a report from Capt. Rickard was read, strongly recommending the working of the western ground, in which several lodes are believed to "exist," which is an error, for they are known to "exist." On one of the said lodes there has been a shallow adit level driven 106 fms., and the same has been opened on further west, at different places, upwards of 150 fathoms more, the width of which varies from 2 to 12 ft., and several tons of lead and copper ores, of good quality, have been raised from it. Two other lodes have been laid open for a considerable distance, and found to be large and well-defined; several tons of ore have been raised from them also, and sold at a good price. There are other lodes which have been opened on in costeaning, and the whole are "promising" ones, and are in killas of the first quality for mineral production.

LATEST CURRENT PRICES OF METALS.

LONDON, DECEMBER 27, 1850.

	per ton.
ENGLISH IRON. *a*	
Bar, bolt, & square, London	£5 7 6–5 10
Nail rods	6 0–6 10
Hoops	7 0–7 10
Sheets (singles)	7 11–8 5
Bars, at Cardiff & Newport	4 11–5 0
Refined metal, Wales*	3 5 –3 15
Do. anthracite*	3 10 0 –
Pigs in Wales	3 0 –3 5
Do. do. forge	2 5 –2 10
Do., No. 1, Clyde ... *net cash*	2 5 –2 6
Blewitt's Patent Refined Iron for bars, rails, &c., free on board at Newport*	3 10 0
Do., do., for tin-plates, boiler plates, &c., ditto	4 10 0
Stirling's Patent } in Glasgow	2 15 0
Toughened Pigs } in Wales	3 10–3 15
Staffordshire bars, at the works	6 0 0
Rails	5 0–5 5
Chairs (Clyde)	4 0 0
FOREIGN IRON. *b*	
Swedish	11 10–12 0
COND	—
PSI	—
Gourieff	—
Archangel	—
FOREIGN STEEL. *c*	
Swedish keg	14 15 0
Ditto faggot	15 5 0
ENGLISH COPPER. *d*	
Sheets, sheathing, & bolts, *p. lb.*	0 0 9¼
Tough cake *per ton*	84 0 0
Tile	£83 0 0
Old copper *per lb.*	8½d
Yellow Metal Sheathing	8d
FOREIGN COPPER. *f*	
South American, in bond	—
ENGLISH LEAD. *g*	
Pig *per ton*	17 10 0
Sheet	18 10 0
Pipe	19 0 0
Red lead	19 0 0
White ditto	25 0 0
Patent shot	21 0 0
FOREIGN LEAD. *h*	
Spanish, in bond	16 0–17 0
ENGLISH TIN. *i*	
Block *per cwt.*	4 3 0
Bar	4 4 0
Refined	4 9 0
FOREIGN TIN *k*	
Banca, H. C.	4 4–4 5
Ditto, for Export only	—
Straits	4 2–4 4
TIN-PLATES. *l*	
IC Coke *per box*	1 7 6–1 8
IC Charcoal	1 12 6–1 13
IX ditto	1 19 0
SPELTER. *m*	
Plates, warehoused *per ton*	16 5–16 10
Ditto, to arrive	16 5–16 10
ZINC. *n*	
English sheet *per ton*	22 0 0
QUICKSILVER *o* *per lb.*	3s. 9d.

WELSH BAR-IRON still continues to be inquired for at firm prices, and the market wears an upward tendency.

SCOTCH PIGS.—Since our last a sudden start has taken place in this article, and a very extensive business has been done at advancing prices. Our market closes very firm.

LEAD remains very firm.

TIN.—Owing to the small quantity offering, but few transactions have taken place, but holders are very firm at the quotations.

ENGLISH TIN.—Consumers have been taking freely.

TIN-PLATES are much inquired for, and no coke plates are to be got under 28s.

COPPER unaltered.—Spelter dull at 16*l.* 10s.

GLASGOW, DEC. 26.—A fair business has been done this week in Scotch pig-iron, at advanced rates, and mixed Nos. good brands, free on board here, must be quoted 45s. to 45s. 3d. per ton, cash, for storekeepers' warrants. As scrip is not yet out of the market, purchases can still be effected of iron at 44s. 6d. per ton; but when once scrip is got rid of, it is probable that the price for warrants and shipment iron will be about the same. No. 1 Gartsherrie, No. 1 Coltness, and other well known American brands, are worth 45s. 6d. to 46s. East Coast brands are in request at 46s. to 46s. 6d.

The accounts from the metal markets of the United States continue to represent holders as steadily exacting former rates, from which no decline could be obtained at New York. Rather large arrivals of Chilian copper had taken place, amounting to about 100,000 lbs. pig, and 400,000 lbs. in ingots, partially refined; but these had been sold for consumption previous to arrival, though the terms had not transpired. New sheathing and yellow metal were steady at previous rates; 3000 lbs. old sheathing brought 18½ c., cash. The market for Scotch pig-iron, though quiet, was firm at $ 19 75 c., cash, and $ 20 75 c. six months, at which rates a few hundred tons had been sold from ship. English bars were steady at $ 36, six months, without transactions of importance. The sales also included 600 packs Russia sheet, just arrived, on private terms, and 250 tons Swedes, to arrive, at $ 82·50, though this price had since been refused. The imports into New York from the 1st of January to the 1st inst. were in all 52,778 tons bar, 41,458 tons pig, and 488,062 bundles, of which 51,532 tons bar, 38,022 tons pig, and 480,070 bundles were from foreign ports. In the same period of 1849 the total imports were 47,372 tons pig, 63,664 tons bar, and 368,588 bundles. For American lead there was more inquiry, and the market was firmer, prices having improved a trifle, and retaining an upward tendency. The last sales made were 3000 pigs soft Galena at $ 4 67½ c., 3000 ditto at $ 4 75 c., cash, and 6000 ditto at $ 4 80 c. to $ 4 85 c. on time, adding interest. Foreign lead is reported quiet; 100 tons were sold at $ 4 62½ c., cash. The imports from the 1st January to the 1st December were 416,594 pigs, of which 203,299 were from foreign ports, and 213,295 coastwise, against a total of 418,834 pigs to same date last year. In tin, sales are mentioned of 250 slabs Banca at 20c., six months, 100 ditto at 19 c., cash, and 600 ditto superior Straits at 18½ c., six months. The total import amounted to 36,848 pigs, and 265,674 plates and boxes, against 47,926 pigs and 186,991 plates and boxes at the same date in 1849.

ACCIDENTS.

The Boiler Explosion at Halifax.—The trial of Samuel Firth, one of the proprietors of the Lily-lane Mill, Halifax, and Joseph Helliwell, the engine-tenter, for the manslaughter of 12 persons, through the explosion of a steam-engine boiler, will not take place until the spring assizes at York. The two prisoners have been admitted to bail—each in 200*l.*, with four sureties of 100*l.* each. As the result of the coroner's inquest, as well as the alleged cause of the explosion, is of considerable interest, we append a copy of the verdict of the jury:—"We find the explosion to have resulted from the improper and excessive generation of steam in the boiler, which, from the imperfect condition of the cotter and lug of one of the cross-stays, along with other serious defects, was at the time in a very unsafe state, arising from the culpable negligence and want of attention on the part of Samuel Firth and Joseph Halliwell; against both of whom we return a verdict of manslaughter." The jury appended to their verdict the following very excellent suggestions:—"The jury deprecate the plan of erecting buildings over boilers. We also recommend very strongly the general adoption of safety valves on each boiler, on a construction which is best suited for the welfare and security of all persons connected with mills and machinery; and to impress upon all mill owners the necessity of employing properly qualified persons as engine-tenters."

Castle Eden Colliery.—As James Stewart, the changer and graither at this colliery, was at work in the shaft, and suspended therein by a rope, the loop in which he was sitting suddenly broke, and he fell to the bottom of the shaft, a depth of about 50 fms. He was taken up quite dead.

Bent Grange Colliery.—While a number of men were putting down a new rope, by some means a piece of nail got entangled, and was thrown down the pit. Its fall was fortunately broken in the descent, but it struck a man at the bottom, named T. Newton, on the knee, and cut the flesh severely, but did no further damage.

Wolverhampton.—James Thomas, a blacksmith, employed at the Rough Hills Colliery, lost his life by falling down one of the pits in that colliery. The deceased had previously been drinking, and the pit being a short distance from the road and unprotected, it is believed that, from the darkness of the night, he missed his path and fell in. The body was frightfully disfigured.

Hindley.—W. Weston and T. Smith were killed, and three companions injured, by an explosion at the Springfield Colliery.

Dowlais.—As David Charles, miner, was working in one of the Clynmill pits, a large stone, nearly 3 tons in weight, fell upon him. He died whilst being carried home.

Bradbury.—F. W. Gee was killed by a fall of roof in Mr. T. Shaw's colliery.

St. Just.—A youth belonging to Levant Mine, fell off a tram-road that ran out a little over the sea, and the sea carried him away. His body has not been found.

Derbyshire.—William Fletcher was killed, owing to a large quantity of bind and stone falling upon him, in a coal pit belonging to the Butterley Company, the deceased having imprudently knocked down a puncheon which supported the roof.—John Coupstake, while employed at the Shipley Colliery, met with his death from a large stone falling upon him in one of the coal pits.—At the Speight-hill Ironstone Works, John Slater unfortunately got his leg entangled in a chain connecting the engine with a drum which turns the ropes belonging to several of the pits, and, after being drawn several times round the drum, became wedged between it and a beam of wood. He was dreadfully injured, and died shortly afterwards.—William Evans, a moulder at the Ystalyfera Works, was severely injured by the fall of a portion of one of the casting stoves, by which his leg and several ribs were broken. He is likely to recover.—Mary Ann Butler, a child seven years of age, was drowned, having accidentally slipped into a stream on her return from a coal pit at Heanor.

The Boiler Explosion at Crow Trees Colliery.—On Tuesday last, the inquest on the bodies of Thomas Graydon and John Smith, whose deaths resulted from an explosion of one of the boilers of the engine at Crow Trees Colliery, on the preceding Wednesday, was resumed, the same having been adjourned from the 19th inst. The evidence, which ran to a considerable length, may be reduced to the followidg statement:—That the engine was worked by two boilers, and there is also a spare one, all of which boilers are made of the best material, of a sufficient thickness to work with safety at a pressure varying from 40 to 50 lbs. to the square inch, and that they were not worked at more than 30 lbs. to the inch; that the valves and floats were in proper working order, and gave the usual indications of perfect safety; that there was a sufficiency of water in the boilers; that on the day of the explosion it being necessary to repair a steam-valve, the engine was stopped, the fires damped, and the middle boiler valves eased; the adjoining boiler, which was in perfect working order, was also eased, but was connected with the middle one, consequently the pressure in each boiler would be equal, and, of course, in case of severe pressure the weakest part would naturally be the first to give way. In this stage it would appear that a portion of the middle boiler at the bottom, which was the weakest part, had from some cause given way, and the water being thus suddenly thrown upon the fire and red-hot flues, had become decome decomposed and converted into gas; hence the explosion, which must have been dreadful, a portion of the boiler having been blown 300 yards, and various other portions scattered in every direction. The other two boilers rolled off their seats. The body of Graydon, who was working at the boiler at the time of the explosion, was found blown to a distance of 150 yards; the other man (Smith) appeared to have been killed close to the boilers. The jury, after hearing the evidence and opinions of several practical engineers, none of whom could detect any want of water, excess of internal pressure, defect in construction, working, or management of the boilers, returned a verdict of "Accidental Death," and exculpated the owners and all other parties connected with the colliery from any blame.

Aberdare Colliery Explosion.—After two adjournments, the inquest on the bodies of the eight unfortunate men, who were killed by the recent explosion of foul air in the New Duffryn Colliery, has been brought to a close. Since the opening of the inquiry a ninth has been added to the number of deaths, and there are seven others seriously burnt and otherwise injured. The jury found a verdict of "Accidental death," adding—"We find that there is no culpable neglect, but emphatically condemn the mode of ventilation hitherto applied, and particularly recommend Mr. Blackwell's system of ventilation to be adopted immediately; and we also condemn the use of brattices in all pits."

CORNISH GRANITE.—A very large block of granite, upwards of 20 feet long, and of the finest quality and colour, has lately been raised by the Cheesewring Granite Company, at their quarries, on the Cheesewring-hill, near Liskeard, which is intended to be sent to the Great Exhibition of 1851. The mass of stone of which is formed a portion in the quarry, contained by measurement the extraordinary quantity of above 4000 cubic ft., or about 300 tons in weight, without crack or flaw. From the increasing reputation this stone is acquiring, it may be expected that a granite which will bear comparison with the best granites from other parts of the kingdom, will be added to the resources of East Cornwall.

Current Prices of Stocks, Shares, & Metals.

STOCK EXCHANGE, Saturday morning, Eleven o'clock.

Bank Stock, 8 per Cent., 214 13	Belgian, 4½ per Cent., 90¾
3 per Cent. Reduced Ann., 97 6 7	Dutch, 2½ per Cent., 58¾ 9
3 per Cent. Consols Ann., —	Brazilian, 5 per Cent., 88 ¼
3¼ per Cent. Ann., 98¼ ¾	Chilian, 6 per Cent., 105 4
Long Annuities, 7¾	Mexican 5 per Cent., ex Coup., 34¼ ¾
India Stock, 10½ per Cent., —	Russian, 5 per Cent., 110¾
3 per Cent. Con. for Opg. 16th Jan. 96¼	Spanish, 5 per Cent, 17½
Exchcq. Bills, 1000*l.*, 11d. 60s 64 pm.	Ditto 5 per Cent., 39¾ ¾

MINES.—Notwithstanding the holidays, a considerable amount of business has been transacted, without, however, any marked rise in dividend and other sound mines. Decidedly more is doing in speculative concerns, there being still a large section of capitalists inclined to operate for immediate profits. What effect the Bank measure of yesterday, intended wholly to check the export of bullion, will have upon these securities remains to be seen. Its influence may prove salutary.

In the Metal Market, Iron wears its improved appearance. Welsh bars have an upward tendency, and a good business has been done in Scotch pigs at advancing rates. Lead and Tin are very firm; Copper and Spelter without alteration.

Silver continues to advance in price, and on Friday the quotation for bar silver was 5s. 1½d., being an advance of ½d., and dollars at 4s. 11½d. At Paris the price of gold is at par, being 1·173 per cent. dearer in that capital than in London. At New York, the present rate of interest for bills at 60 days' sight leaves a small profit on the importation of gold from the United States.

In another page of the Journal will be found a general review of mining transactions for the past year, to which we direct the attention of our readers. Its tenor, we are sure, will be highly satisfactory, inasmuch as in the *resumé* there given the vast progress of mining in public estimation will be at once perceived. The list of dividend-paying mines is, in this respect, very instructive, as showing not only the increased value, but the solid nature of such investments, whilst the amount of dividends paid by the various mines must be deemed a no less decisive test of the profit derivable therefrom. As compared with 1849, there is an increase on the dividends paid during the present year of 27,829*l.*, and, compared with 1848, of 84,546*l.*—the number of mines paying dividends being four more for this year than for 1849, and 26 more than in 1848. The large amount of dividends paid in 1845 is attributable to the discoveries made in Devon Great Consols in that year. The greatly enhanced value of shares in several mines is a striking feature, of which Alfred Consols, Condurrow, East Pool, South Tolgus, South Basset, West Buller, among others, afford ample evidence. The advance, likewise, apparent in many new shares which have come into the field of mining speculation for the first time this year will not be lost sight of, and of which East Leisure, Trannack and Bosence, Wheal Venton, and others, are marked instances. The other changes noticed are well worthy of attention, being such as afford gratifying indications not merely of the profits derived from past operations, but of the good prospects which await the prudent capitalist and speculator in mining property.

The dividends during the present month have been as follows:—

	Per Share.	Amount.		Per Share.	Amount.
S. Wheal Basset	£10	£2560 0 0	Wheal Margaret	£5	£560 0 0
South Tolgus	2½	640 0 0	Levant	5	800 0 0
Lewis	¼	500 0 0	Wheal Tremayne	¼	768 0 0
Cwmystwith	5	640 0 0	Weal Golden	¼	1000 0 0
General Mining Company for Ireland		10 per cent.			650 0 0

The dividends paid on 10 mines in October amounted to 9993*l.*, and in November on 17 mines to 43,608*l.*

The sale of copper ore at Redruth, on Thursday, amounted to 2398 tons, producing 10,732*l.* 1s. 6d.

The East Wheal Rose sold 50 tons of lead ore, at 14*l.* 2s. 6d. per ton, and 65 tons at 14*l.* per ton.

The Wheal Trelawny sold 100 tons of lead ore, which realised the high price of 21*l.* 10s. per ton.

The Newtonards Mine sold 60 tons of lead ore, at 11*l.* 15s. per ton.

Wheal Golden sold 60 tons of silver-lead ores, at 12*l.* 10s. 6d. per ton, delivered on the mine.

The South Speed Mine sampled 25 tons of copper ore on Monday.

At Wheal Russell, last week, 38 tons of copper ore were sampled.

The monthly sampling of copper for Alfred Consols was 209 tons, being rather less than that of last month. The report still gives evidence of the value of the mine, one lode being stated at 120*l.* to 140*l.*, and another from 130*l.* to 150*l.* per fathom, being nearly all solid ore.

The profitable working of Merllyn Lead Mine, in North Wales, was originally owing to the perseverance of a few poor men, who obtained 13,000*l.* worth of lead ore in 12 months, the extent of their operations being only 70 yards in length, and 30 yards in depth. It is now held by a company under a lease of 21 years, and it is calculated there will be a profit on the first month's working.

The lode in East Wheal Leisure, in the adit level, is still producing 5 tons of ore per fm.; the western end about 3 tons per fathom.

Some good stones of lead, rich in silver, has been obtained from Wheal Bawden within the last few days.

A favourable report is given of the capabilities of Nap Down Consols Mine, at which operations have lately been recommenced—rich specimens of ore having been raised, of extraordinary size and weight, and apparently justifying the highest anticipations of future success. It is stated that six well-defined lodes have been already discovered, from one of which 1100*l.* worth of silver ore has been already returned.

At Wheal Penhale a stone has been hauled to surface from the winze, of little else than solid ore, weighing 248 lbs., principally lead.

The operations at Lamerhooe Wheal Maria and several other mines have been, in some degree, impeded, owing to the surface water being greatly increased by the heavy floods.

The Cook's Kitchen Mine accounts show—Balance to the end of June, 1520*l.* 10s. 11d.; July cost and merchants' bills, 958*l.* 3s. 7d.; August ditto, 1007*l.* 18s. 4d.; September, 815*l.* 3s. 11d.; October, 1053*l.* 4s. 9d.; lord's dues, 52*l.* 4s. 10d.=5407*l.* 6s. 4d.—Sales of tin, 1567*l.* 10s. 4d.; copper ore, 131*l.* 12s. 6d.; arrears of calls, 42*l.* 10s.=1741*l.* 12s. 10d.—leaving book in debt, 3665*l.* 13s. 6d., which, at a meeting held at the mine, on the 18th inst., was divided rateably over the shares and collected. The 47 cross-cut, south of new south lode, is to be cleared, with a view to ascertain what lodes or branches may have been intersected in driving such cross-cut.—[The report will be found among the Mining Correspondence.]

The Trehane accounts show—Balance in hand last account, 55*l.* 9s. 4d.; ore sold in Oct., 1177*l.* 12s. 6d.; Nov., 235*l.* 9s. 3d.=1468*l.* 11s. 1d.—Mine cost, July and August, including sundries, 1308*l.* 11s. 1d.—leaving balance in hand, 159*l.* 16s. 6d. The report states the lode in the 88 fathom level south to be worth 3*l.* per fm.; in the 78 north, worth 9*l.*; the stopes in back of this level, worth 7*l.*; in the 68, 8*l.*; in the 55, 9*l.* The parcel of ore sold, 55 tons, at 23*l.* 3s. 6d. per ton.

Tregordan accounts show a balance against the company of 248*l.* 9s. 4d.—liabilities, including Nov. cost, 586*l.* 9s. 2d. A call of 2*l.* per share was made. The report states, from present prospects it is hoped the returns will be increased in future.

The Wheal Golden accounts showed a balance in favour of adventurers of 1244*l.* 7s. 5d. The sale of ores, since October, amounted to 1343*l.* 11s. A dividend of 5s. per share (1000*l.*) was declared—the chairman expressing his opinion that a dividend might be anticipated at their succeeding bi-monthly meetings. There are 40 tons of ore yet unsold; and the agent's report stated that "the mine never looked so well as at present."

At the Wheal Crebor meeting, the report of the managing committee stated that a satisfactory arrangement had been made for a mineral lease of the Earl of Devon's land for 21 years, at 1-15th dues, and a premium of 50*l.*: a letter of license for searching for minerals in Mr. Rice's land had also been obtained. Some delay had been consequent on these negotiations, but in future the works would proceed without interruption. The ore sold in November, which was taken from the ground left open by the former adventurers, produced 3*l.* 9s. per ton, but the ore raised by the present company is expected to be of richer quality. Reports from the resident agent and monthly inspector were read, from which it appeared that an improvement had taken place at the western part of the mines, for the development of which operations are actively in progress. Capt. James Richards is of opinion that the ground now laid open will, in a very short time, yield about 25 tons of ore every two months. The cost for the last two months was 335*l.* 14s. 2d.; total expenditure, to 21st inst., 1588*l.* 2s. 6d.; total receipts, 1728*l.* 2s. 2d.—leaving balance in favour of company, 139*l.* 19s. 8d. The balance of assets over liabilities amounted to 48*l.* 4s. 8d. For the carrying on further operations at the mine, a call of 10s. per share was made.

The Bosence Mine accounts for four months, ending September, show—Materials, 1360*l.*; merchants' bills, 845*l.* 19s. 11d.; wages, 379*l.* 12s. 10d. =2585*l.* 12s. 9d.—By calls, 1200*l.*; materials, 30*l.*: leaving balance against adventurers, 1355*l.* 12s. 9d. A call of 10*l.* per share was made to meet the loss, leaving a balance of 155*l.* 12s. 9d. against the adventurers, to be carried to next account.

At the Penzance Consols meeting, a report on the mine was read, stating that a great improvement was observable in each lode—the 24 fm. level, on the north lode, being worth 12*l.* per fm. From 55*l.* to 60*l.* worth of tin is stated to have been raised from it during the past month. Three months, it is estimated, will suffice for laying open the tin ground; after which a profit may be expected by the adventurers.

At the Wheal Arthur meeting, it was resolved, on account of the satisfactory prospect of the mines, that a deposit of 1*l.* per share only should be taken on the shares not yet disposed of—those shareholders who had paid more having an additional number, equal to an equivalent amount. It is fully expected that the remaining shares will be quickly taken up.

Among the shares which have changed hands during the week are—Devon Great Consols, East Wheal Leisure, Tremayne, Bedford United, West Alfred, West Providence, Merllyn, Trelawny, Venton, East Tolgus, Kirkcudbright, Trebarvah, Wheal Arthur, East Wheal Reeth, Praed Consols, West Nant-y-Mwyn, Mill Pool, North Tolgus, Cefn Bruno, Condurrow, Bodmin Moor Consols, Cook's Kitchen, East Wheal Frances, Gustavus, Holmbush, Lamherooe, North Buller, Pendarves Consols, St. Aubyn and Grylls, South Plain Wood, Trannack and Bosence, Treviskey, West Caradon, Wheal Mary Ann, Wheal Venton, West Frances, Mining Company of Ireland, Stray Park, East Tywarnhayle, Lanarth, South Wheal Frances, and Wheal Prudence.

In Foreign Mines, there has been but little alteration—few transactions having taken place. United Mexican are now quoted 5⅛ to 5⅜, and Copiapo and Santiago at a slight advance on last week's prices.

The report of the Copiapo Company, which will be found elsewhere, gives an account of the operations at the different mines. At San Pedro the lode is 18 inches wide, and yielding ore of a superior quality; and at Checo, in the 20 fm. level, east of Harman's shaft, the lode is from 3 to 4 ft. wide, with a leader of 20 in. of very rich ore; produce of stopes, 30 to 35 per cent. From the operations in La Compania good results are shortly expected, and the stopes yield well. In La Reyna the lode is changing its character, and is now giving beautiful stones of ore, yielding 28 to 30 per cent., and a good course of ore is calculated upon. Similarly favourable results are anticipated in several of the other workings. During September the produce was 52 tons. The report from the silver mines is generally good. In the 25 fm. level, in the Al Fin Hallada Mine, the lode is likely to be very productive, and 14 to 15 cajones of ore, worth 9000*l.*, it was expected would be ready for removal by the end of October. From the gold mines, in which no change is noticed, a few cargas of gold, and two tons of copper ore, have been raised during October. The operations in some of the mines had been suspended, owing to a scarcity of native labourers. An ingot of gold and bar of silver, to the value of 2200*l.*, has been received by the company.

By the usual report from Linares, we perceive that in the San Anton winze the men have completed the distance stated by Capt. Curry in his monthly report, and the driving is extended east and west; a decided improvement is expected as the operations proceed in both directions; the lode contains at present occasional bunches and stones of lead, and the object is to get under the good ore ground about Wilson's shaft; in the latter some improvement is reported, the lode being worth about 5 tons per fm. At Shaw's shaft it is intended to sink under the 45; the produce is 2 tons per fm. A good lode is being opened in the 31 fm. level driving east, worth from 2 to 3 tons per fm. Arrangements are in progress for the erection of furnaces for the proposed smelting operations, from which the superintendent at the mines anticipates the most advantageous results. The amount of ore at Linares, Baylen, Seville, Malaga, and on shipboard, is 418 tons 8 cwts. It will be gratifying to the shareholders to learn that the 4500 additional shares recently issued have been all taken up, which may be viewed as a marked proof of confidence in the policy adopted by the directors. The dividends on the preference shares will, we understand, be payable on the 15th January.

The Royal Santiago despatch, under date of Cobre, Nov. 18, contains little information in addition to that recently given. In Perseverancia, Thompson's shaft had been developed 2 fms., the lode being a mixture of yellow coated copper, with arsenical pyrites and quartz. The lode east from shaft is yielding 2½ tons per fm., and in the winze in the same direction the lode is from 8 to 9 ft. wide, the stratum being compact greenstone; west, the lode continues disordered, and in the stopes between the adit and 10 fm. level is unaltered. At the deep adit the lode is unproductive, and consequently suspended; in the winze in the bottom the lode yields 3 tons per fm. A further development of the resources of Fortitude and the other mines is going forward, but no very important result is yet presented.

The only intelligence received by the National Brazilian Company, dated Cuiba, October 16, is that a large mass of productive ground is now open, in direct communication with the tramroad. The produce from Sept. 27 to October 16 is stated at 4 mks. 2 ozs. 4 dwts. 7 grs. There is no news from Cocaes.

Imperial Brazilian advices, dated Bananal, Oct. 13, state that a marked improvement had been observable in the produce of the 10 days preceeding that date, both from the stopes in the back of the 24 fm. level, and the back of the 7 fm. level. Good and regular returns were also expected from these sources. Exertions are being made to get down to another level, as the basis of future operations; and a general activity, judging from the report, pervades the operations at the mine. At Gongo the produce had been small, owing to the scarcity of water, and the indifferent quality of the jacotinga supplied. An accident had occurred to some of the machinery, which was likely to impede the working in the 24 fm. level for a short period.

HULL, THURSDAY.—Messrs. T. W. Flint and Co. state, that during the week which has elapsed since their last report, there has been an average amount of business done in mining shares. St. Aubyn and Grylls, and Bedfords, have changed hands to some extent, as have also Tremaynes, Wellingtons, West Providence, and South Tamars. Trebarvahs are rather more inquired for; Herodsfoot, Trefusis, and Gustavus rather more offered. They consider the prospects for mining shares very good, and that there is likely to be an increased amount of business in the early part of the new year. Railway shares have been in good request.

COALS FOR INDIA.—The East India House will, on the 3d January, receive tenders for supplying 2000 tons of coals, to be delivered at Alexandria; West Hartley, Carr's ditto, Buddle's ditto, Davison's ditto, Hartlepool West Hartley, Stewart's Wall's-End (steam coal), and Ravensworth West Hartley (screened). The contracts for coal for the ensuing year for the Hon. East India Company's steamers is expected to be considerable, and will cause great competition. Several new steamers are being constructed for that service.

ENGLAND'S SCIENTIFIC EMINENCE.—We were much delighted to find, in a recent German work, by Kolbe, *Upon the Chemical Constitution and Nature of Organic Compounds*, that the name of our esteemed correspondent, Dr. Muspratt, held the most honourable place, evidently arising from his important and numerous discoveries. Liverpool has had her Roscoe in literature: she may well be proud of her Muspratt in science.

THE IRON TRADE.

MEETING OF SOUTH STAFFORDSHIRE IRONMASTERS.

The usual preliminary meeting of the ironmasters was held yesterday, at Dudley. There was a large attendance, and all the firms of consequence were represented. A well-grounded hope of "better times" beamed in every one's face, and, upon the whole, we learn that a more cheerful meeting has not taken place since the commencement of the present year.

Although the iron trade wears just now a more healthy appearance than it has for some years past, it was deemed expedient, under existing circumstances, to continue the present rate of prices. No alteration will, therefore, be made, yet it could not be concealed that the demand has improved considerably, and that the new year is likely to find it still more so. Already, we learn that some works are overwhelmed with orders from the United States, and a further demand for spring shipments is calculated upon.

Railway matters, here and abroad, are likely, in the ensuing year, to revive, and something more than symptoms of this improvement are already manifesting themselves. It is also expected that the magnificent structure in course of erection for the Great National Exhibition will induce similar buildings to be erected, more particularly on the continent and America, when foreigners have an opportunity, as they shortly will, of witnessing the splendid results of manufacturing skill and enterprise in this country, and the commercial advantages which must result to them from an unfettered interchange between nations. On the whole, we may congratulate the manufacturers of our great iron district on the prospects which are at length beginning to dawn upon them.—From the *Birmingham Journal*, of this morning.

MINING APPOINTMENTS DURING JANUARY.

1. No copper ore sampling this week.
2. Ticketing at Redruth—Tincroft and other mines
3. Pay at Carn Brea, South Basset, East Pool, and Tincroft.
4. Pay at Devon Consols, Par Consols, Perran St. George, West Jewel, Dolcoath, and Stray Park.
6. South Frances account, upon the mine.
8. Devon Consols and other mines sampling.
9. Ticketing at Redruth, Carn Brea, and other mines.
10. North Pool setting—West Caradon, and Gonamena pay.
11. Pay at East Crofty, West Treasury, Alfred Consols, and Phœnix United Consols.
13. North Roskear account, on the mine.
14. Wheal Buller and Alfred Consols accounts on the mines. [mines.
15. Great Consols account on the mine. Sampling at Consols, United, and other
16. No copper ore ticketing this week.
17. United Mines account on the mine. Pay at Wheal Buller and Levant.
18. Pay at Great Consols, Comfort, Cook's Kitchen, Pendarves, Seton, Fowey Consols. Setting at Levant.

PRICES OF MATERIALS,

As Charged at Stray Park Mines during the following Months:—

DESCRIPTION.	SEPTEMBER.	OCTOBER.	
Coal, carriage included	13s. 6d.	13s. 6d.	per ton.
Timber, balk	0 10	0 10	per foot.
Iron, common	5 6	—	per cwt.
Rope	34 0	—	,,
Hemp	0 4	—	per lb.
Tallow	39 0	39 0	per cwt.
Leather	1 0	1 0	per lb.
Candles, best	4 6	4 6	per dozen.
Powder	36 0	36 0	per 100 lbs.
Cans	4 3	—	per dozen.
Shovels	—	26 0	per cwt.
Hilts	1 4	1 4	,,
Safety fuze	0 3	0 3	per coil.

SILVER-LEAD ORE

Sold at the Mine.

Mines.	Tons.	Price per Ton.	Purchasers.
Wheal Golden	30	£12 10 6	Penpoll Smelting Co.
ditto	30	12 10 6	Michell & Son.

Tickelings at the King's Head Hotel, Holywell, 26th December.

Pant-y-mwyn	50	£11 1 6	Walker, Parker, & Co.
Pen-yr-henblas	55	11 8 0	Newton, Keates, & Co.
Westminster	50	11 7 0	ditto
ditto	45	11 8 6	J. P. Eyton.
Jamaica	50	11 5 0	Newton, Keates, & Co.
Belgraves	15	11 5 6	Walker, Parker, & Co.
Maesyasfn	70	11 8 6	Newton, Keates, & Co.
ditto	60	11 9 6	Walker, Parker, & Co.
Milwr	23	12 4 0	Newton, Keates, & Co.
Halkin Hall	13	11 8 0	ditto
Cairnsmore	40	10 17 0	ditto
Strontian	40	11 8 6	ditto

Sold at the Mine.

East Wheal Rose	50	£14 2 6	Tamar Company.
ditto	35	14 0 0	T. Somers.
ditto	30	14 0 0	ditto

Sold at Lesteard.

Trelawny	100	£21 10 0	Walker, Parker, & Co.

LEAD ORES

Sold at Bagilt, on the 20th of December.

Mines.	Tons.	Price per Ton.	Purchasers.
Newtonards	60	£11 15 0	Newton, Keates, & Co.

Sold at Aberystwith, on the 23d December.

Goginan	40	£16 18 0	Michell & Sons.
ditto	40	16 18 0	Penpoll Smelting Co.
Frongoch	80	11 10 0	Panther Smelting Co.
Cwmystwith	80	11 3 0	Walker, Parker, & Co.
Nantcos	55	10 18 0	ditto

COPPER ORES

Sampled Dec. 11, and Sold at Andrew's Hotel, Redruth, Dec. 26.

Mines.	Tons.	Price.	Mines.	Tons.	Price.
United Mines	110	£6 17 6	South Caradon	91	£9 9 6
ditto	109	3 12 0	ditto	51	8 10 6
ditto	101	3 19 0	ditto	42	5 7 0
ditto	83	3 14 6	ditto	41	6 18 6
ditto	67	3 12 0	South Tolgus	100	4 5 6
ditto	52	3 10 6	ditto	69	4 3 0
ditto	51	5 12 6	ditto	36	10 11 6
ditto	50	6 9 6	Wheal Comfort	63	1 7 6
ditto	46	5 10 6	ditto	55	2 4 0
ditto	37	1 9 6	ditto	40	0 16 6
ditto	26	5 17 6	ditto	22	3 13 6
ditto	25	2 19 6	Treleigh Consols	67	3 10 6
Tresavean	117	2 17 0	ditto	39	5 5 0
ditto	98	3 5 6	ditto	8	2 2 6
ditto	89	2 19 0	Wheal Mary	47	5 6 0
ditto	70	2 14 6	ditto	38	3 13 0
ditto	39	2 12 6	ditto	15	2 7 6
Par Consols	85	4 15 6	West Wh. Jewel	32	5 13 0
ditto	82	6 9 6	ditto	27	3 13 6
ditto	57	4 17 6	West Trethellan	14	2 16 6
ditto	46	5 5 0	Richards's Ore	14	4 8 0
ditto	44	4 0 6	Respryn	6	6 2 0

TOTAL PRODUCE.

United Mines	757	£3377 15 0	Treleigh Consols	114	£457 18 6
Tresavean	410	1203 5 0	Wheal Mary	100	423 8 6
Par Consols	314	1633 6 0	West Wheal Jewel	59	289 0 6
South Caradon	225	1805 12 6	West Trethellan	14	39 11 0
South Tolgus	205	1094 11 0	Richards's Ore	14	61 12 0
Wheal Comfort	180	321 9 6	Respryn	6	36 12 0

Average Standard £110 1 0 | Average Produce 6¾
Average Price per ton £4 9 6
Quantity of Ore 2398 tons | Quantity of Fine Copper, 157 tons 9 cwts.
Amount of Money £10,732 1 6

LAST SALE.—Average Standard £ 97 13 0.—Average Produce 9¾
Standard of corresponding sale last month, 103*l.* 19s.—Produce, 7¾.

COMPANIES BY WHOM THE ORES WERE PURCHASED.

	Tons.	Amount.
Mines Royal	136	£808 4 0
Vivian and Sons	363	1486 2 8
Freeman and Co.	399	1655 12 0
Greenfell and Sons	430	1956 6 3
Crown Company	198	788 13 2
Sims, Willyams, and Co.	260	1036 5 9
Williams, Foster, and Co	432	1995 17 2
Schneider and Co.	180	1005 0 6
Total tons	2398	£10,732 1 6

Copper ores for sale on Thursday next, at Andrew's Hotel, Redruth.—Mines and Parcels.—Tincroft 707—North Roskear 653—North Pool 513—Consolidated Mines 428—Wheal Basset 401—Wheal Seton 367—South Wheal Frances 231—Fowey Consols 220—Copper Bottom 26.—Total quantity of ore to be sold, 3546 tons.

Copper ores for sale on Thursday week, at Andrew's Hotel, Redruth.—Mines and Parcels.—Carn Brea 634—Tywarnhayle 409—Wheal Buller 361—Par Consols 302—Alfred Consols 209—Levant 200—Wheal Agar 46—Hawk's Point 45—South Wheal Speed 26—Cook's Kitchen 25—Evans's slag 25—Treivon Consols 24—Wheal Towan 20.—2326 tons.

COAL MARKET, LONDON.

PRICE OF COALS PER TON AT THE CLOSE OF THE MARKET.

MONDAY.—Bate's West Hartley 14—Buddle's West Hartley 14 6—Carr's Hartley 14 6—Chester Main 14 9—Clavering's New Tanfield 13 6—Davison's West Hartley 14 6—East Adairs Main 12 9—Holywell 13 6—Howard's West Hartley Netherton 14 6—Hedley's Hartley 13 6—North Percy Hartley 14—Pelaw Main 14—Ravensworth West Hartley 14 6—South Peareth 13—Tanfield Moor Butes 13 3—Walker Primrose 12 9—Wylam 15—Wall's-End Acorn Close 15 6—Baxter 14 9—Brown 14 9—Gosforth 15 9—Harton 15 9—Heaton 15 9—Lawson 15—Morrison 15 6—Original Gibson 15—Eden Main 15 9 and 16—Bell 16—Belmont 16—Braddyll 16 9—Hetton 17—Haswell 17 3—Lambton 16 9—Lumley 15 9—Pemberton 15 3—Richmund 16 3—Russell's Hetton 16 6—Scarborough 15 9—Stewart's 17—Whitwell 15 6—Howdon 15 6—Bentley 15 6—Caradoc 16 3—Cassop 16—Heselden 15 3—Heugh Hall 16—Kelloe 16 9—South Hartlepool 16 6—South Kelloe 16—Thornley 15 9—West Hartlepool 16 3—Whitworth 13 6—Adelaide Tees 16 6—Clavering Tees 14 6—Cleveland Tees 15 6—Maclean's Tees 14 9—Richardson's Tees 15—Seymour Tees 15 3—South Durham 15 9—St. Helen's Tees 15 3—Tees 17—Vernon Tees 15 6—West Cornforth 15 3—Begbie's Hartley 13 6—Gors Goch Stone 23—Hartley, 30—Hetton Small 10 6—Snapethorpe 15—Sydney's Hartley 14 6.—Ships, 282: sold, 246.

FRIDAY.—Bate's West Hartley 14—Buddle's West Hartley 14 6—Davison's West Hartley 14 6—East Adair's Main 12 9—Hasting's Hartley 14 6—Holywell 15 6—North Percy Hartley 14—Ord's Main 14 6—Ravensworth West Hartley 14 6—South Peareth 13 Tanfield Moor Bute's 13 3—Walker Primrose 12 9—West Hartley 14 9—Wylam 14 6—Wall's End Baxter 14 9—Brown 14 9—Hedley 15 3—Lawson 15—Walker 15—Eden Main 15 9—Bell 16—Belmont 16—Braddyll 16 6—Haswell 17 3—Lumley 15 9—Richmund 16 3—Caradoc 16—Kelloe 16 6—South Hartlepool 16 6—West Hartlepool 16 3—Whitworth 13 6—Tees 17—Birchgrove Graigola 19—Gors Goch Stone 22—Hartley 13 9—Nixon's Merthyr and Cardiff 21—Snapethorpe 14 9—Sidney's Hartley 14 6.—Ships 317.

NOTICES TO CORRESPONDENTS—*(Continued).*

Mr. Ennor's paper, On the Geological Features of the Tavistock District, shall appear in next week's Journal.

The Count de Werdinsky's new motive-power was described in the *Mining Journal* on the 14th April, 1849.

PRICES OF MINING SHARES.

*** As it is exceedingly difficult to obtain a correct knowledge of all the mines in our list in London, we trust the agents, and others interested, will assist us, by forwarding any corrections with which they may be acquainted—our object being to present as perfect a list as can be procured.

BRITISH MINES.

Shares.	Company	Paid.	Price.
5120	Alfred Consols (copper), Hayle, Cornwall	2½	19½ 20
1248	Allt-y-Crib (silver-lead), Talybont, Cardiganshire	5	10
1624	Balleswidden (tin), St. Just, Cornwall	9	10 10½
940	Balnoon Consols (tin), Uny Lelant, Cornwall	6	4½ 6
905	Barristown (lead), Carrick, Ireland	5½	—
3650	Bawden (silver-lead), Cornwall	7s	½ ⅝
4000	Bedford United (copper), Tavistock, Devon	2½	6¾ 6½
1280	Birch Tor and Vitifer (tin), Dartmoor, Devon	10½	4
1500	Bishopstone (silver-lead), Glamorganshire	2½	10
5000	Black Craig (lead), Kirkcudbrightshire	5	5
8000	Blaenavon (iron), South Wales	50	12½
1024	Bodmin Consols (lead), Wadebridge, Cornwall	4	4
5000	Bodmin Moor Consols (tin and copper), Bodmin, Cornwall	1	4 4½
—	Bodmin Wheal Mary (tin)	5	6¾
40	Bolowall and Nanpean (tin), St. Just, Cornwall	—	16
1024	Borringdon Park (silver-lead), Plympton, Devonshire	¼	3½
128	Bosscan (tin), St. Just, Cornwall	10	10
60	Bosorn (tin), St. Just, Cornwall	3½	6
100	Botallack (tin and copper), St. Just, Cornwall	182	200
1500	Bridford Wheal Augusta (lead), Bridford, Devon	¼	—
10000	British Iron, New, regis. (iron), South Wales	12	8
—	Ditto ditto, scrip	10	10
2400	Bryn-Arian (lead), Cardiganshire	2	2 2½
1000	Bryntail	2½	11½ 12
107	Budnick Consols (tin), Perranzabuloe, Cornwall	52½	10 11½
406	Butterdon (lead), Menheniott, Cornwall	1½	8 9
2000	Bwich Consols (silver-lead), Cardiganshire	4	4½
1000	Cae-Gynon (silver-lead), Cardiganshire	½	1½
1000	Callington (lead and copper), Callington, Cornwall	26	6½
4000	Caistock United (copper)	5	5
1000	Camborne Consols (copper), Camborne, Cornwall	7	7½
20000	Cameron's Steam Coal (coal), Swansea, Wales	10	2 2½
1168	Caradon Great Cons. Mines (copper), Linkinhorne, Corn.	7	3
1536	Caradon Vale (copper and lead), St. Ive, Cornwall	1½	1½ 1⅝
1000	Carbona (tin and copper), Crowan, near Camborne	5	10
1000	Carn Brea (copper and tin), Illogan, Cornwall	15	120
3000	Carthew Consols (cop. & lead), near Wadebridge, Cornwall	4	7
1056	Carvannall (copper), Gwennap, Cornwall	2½	8
200	Cefn Bruno (lead), Cardiganshire	6	45 50
500	Combiawn (lead), Callington, Cornwall	5½	—
128	Comfort (copper), Gwennap, Cornwall	45	100
256	Condurrow (copper and tin), Camborne, Cornwall	20	110 115
2560	Cook's Kitchen (copper and tin), Illogan, Cornwall	15½	9 10
1000	Coombe Valley Quarry (slate), St. Ginnis, Cornwall	5	2
1000	Copper Bottom (copper), Crowan, Cornwall	10½	10 11
900	Court Grange (silver-lead), Cardiganshire	10	12
211	Craddock Moor (copper), St. Cleer, Cornwall	28	7½
1600	Craig-y-Mwyn (lead), Llanrhiadr, Montgomeryshire	8	10
256	Crane and Bejawsa (copper), Camborne	8	12
1000	Cwm Daren	1	3
1000	Cwm Erfin (lead), Cardiganshire	6	6½ 7
2000	Cwm Sebon	—	4
128	Cwmystwith (lead), Cardiganshire	60	100
1000	Daren (silver-lead), Cardiganshire	2	8½ 9 10
7100	Derwent (silver-lead), Durham	10	3
1040	Devon and Courtenay Consols (copper), near Tavistock	6	1 1⅛
1024	Devon Great Consols (copper), near Tavistock	1	250 260
1000	Dhurode (copper), Ireland	2	5
180	Dolcoath (copper and tin), Camborne	252	18 20
2560	Drake Walls (tin and copper), Calstock, Cornwall	6½	2½ 3
10000	Durham County Coal (coal), Durham	45	9
3000	Dyfngwm (lead), North Wales	10	3 4
1024	East Balleswidden (tin), Sancreed, Cornwall	⅛	1½ 1⅝
2500	East Birch Tor (tin), North Bovey, near Ashburton	3	3
1024	East Buller (copper), near Redruth, Cornwall	2	6½
128	East Carn Brea (copper), Redruth, Cornwall	4	3
2048	East Crowndale (tin), Tavistock	7½	1⅛
150	East Daren (lead), Cardiganshire	17	53 55
256	East Godolphin (copper), Crowan, Cornwall	13½	13
4000	East Gunnis Lake Junction (copper), Gunnis Lake	¼	1½
1024	East Polgooth (tin), Cornwall	6	7½
128	East Pool (tin and copper), Pool, Illogan, Cornwall	24½	150
—	East of Scotland Malleable Iron Company	7	⅛
256	East Seton and Wheal Maude, near Redruth, Cornwall	—	4½
1024	East Sharp Tor (copper), Cornwall	—	8
9000	East Tamar Consols (silver-lead), Beer Ferris, Devon	1½	1½
256	East Tolgus (copper), Redruth, Cornwall	1½	18½ 20½
1000	East Trescoll (tin), Lanivet, near Bodmin, Cornwall	1	2 2½
128	East Tywarnhayle (copper), St. Agnes, Cornwall	5	10
94	East Wheal Crofty (copper), Illogan, Cornwall	125	250
256	East Wheal Frances, Illogan	2½	5 6⅛
2048	East Wheal George (copper)	1	10
512	East Wheal Josiah (copper), near Tavistock	1½	2
512	East Wheal Leisure (copper), Perranzabuloe	3	33 35
1000	East Wheal Reeth	⅛	1½
128	East Wheal Rose (silver-lead), Newlyn, Cornwall	80	600 650
4000	East Wheal Russell (copper), Tavistock	¼	6 8
1280	Esgair Llee (lead), Llanfihangel-y-Croythin, Cardigan	2	3½ 4
248	Exmoor Wheal Eliza (copper), South Molton, Devon	11	10
494	Fowey Consols (copper), Tywardreath, Cornwall	40	30
1024	Freidd Llwydd Mines (lead), Wales	1½	3½
256	Garras (lead), near Truro	43	23
1000	Gelli-rei-vin (silver-lead), Cardiganshire	1	5
4000	General Mining Company for Ireland (copper), Ireland	1⅛	4
100	Goginan (lead), Cardiganshire	40	200
256	Gonamena (copper), St. Cleer, Cornwall	46	15
2500	Georgia Consols (tin), St. Ive's, Cornwall	2½	7 7½
256	Grambler and St. Aubyn (copper), Redruth, Cornwall	80	38
96	Great Consols (copper), Gwennap, Cornwall	1000	250
512	Great Wheal Baddern (tin and silver-lead), Kea, Cornwall	20	80 100
1024	Great Sheba Consols (tin and copper), Stoke Climsland	2	4 4½
3072	Great Wheal Mitchell Consolidated, Lanivet	—	5
512	Gt. Wh. Rough Tor Consols (copper), near Camelford	29	20
6000	Growa Slate Company, Camelford, Cornwall	5	5
1026	Gustavus Mines (copper), Camborne	5½	6 6½
512	Hawke's Point (copper), Uny Lelant, Cornwall	5½	6½
1024	Hawkmoor (copper), Calstock, Gunnis Lake	5	17
6000	Heignston Down Consols (copper), Calstock, Cornwall	2½	2 3
1500	Hennock (silver-lead), Hennock, near Exeter, Devon	2½	3½ 3⅝
512	Herodsfoot (lead), near Liskeard	27	14 15
10000	Hibernian (copper), Ireland	12½	1⅝
1000	Holmbush (lead and copper), Callington	23	21 22
1900	Keswick (lead), Portinscale, near Keswick	11	2 3
1024	Kingsett & Bedford (lead & copper), St. Mary Tavy, Devon	3⅜	3
787	Kirkcudbrightshire (lead), Kirkcudbrightshire, Scotland	8⅛	5½ 5⅝
1742	Lamherooe Wheal Maria (copper and tin), Lamerton	13	11½ 12
252	Lanarth Consols (copper), Gwennap, Cornwall	10	8
256	Lelant Consols (tin), Uny Lelant, Cornwall	90	21 22
160	Levant (copper and tin), St. Just, Cornwall	—	175
1000	Lewis (tin and copper), St. Erth, Cornwall	17	19 20
100	Lisburne (lead), Cardiganshire	75	600
1000	Llwynmalees (lead), Cardiganshire	9½	8 9
3600	Llynvi Iron (iron), North Wales	50	50
5000	Low's Patent Copper Company	7	7
6000	Marke Valley (copper), Caradon, Cornwall	10	⅜ ½
5000	Mendip Hills (lead), near Bristol	3½	1½ 2
5000	Merllyn (lead), Flint	2½	5½ 5⅝
128	Metha (lead) Newlyn, Cornwall	34	—
1024	Mill Pool (tin and copper), St. Hilary and Germoe, Corn.	⅛	3½
256	Mineral Court (tin), St. Stephens, near St. Austell	22½	40
20000	Mining Co. of Ireland (copper, &c.), Waterford, Ireland	7	4⅞ 5
1024	Moditonham & Marrabro' (copper & lead), Botes-fleming	1½	2½ 3
1024	Montgomery (lead and copper), Montgomeryshire	6	11½ 12
320	Nansegollan (tin and copper), Camborne	½	2
200	Nanteos (lead), Cardiganshire	34	25
3000	Nant-y-Car (copper), near Rhayader, Breconshire	—	5 5½
1024	New East Crowndale (copper and tin), Tavistock	2	2
6000	North Wheal Basset (copper and tin), Illogan, Cornwall	—	15 20
1024	North Buller (copper), Redruth, Cornwall	3	12 13 14
1200	North Wh. Buller, or Gt. South Tolgus (copper), Redruth	5	7
2000	North Levant (tin and copper), St. Just, Cornwall	—	3
100	North Pool (copper and tin), Pool, Cornwall	45	420
140	North Roskear (copper), Camborne, Cornwall	5½	160
256	North Tolgus (copper), Redruth, Cornwall	2½	15½
256	North Trefusis (tin and copper), Redruth	1	2 3
362	North Wheal Leisure, Perranzabuloe, Cornwall	1½	1⅝
1024	North Wheal Robert (copper), Walkhampton, Devonsh.	2	2
512	North Wheal Vor (tin), Breage, near Helston, Cornwall	—	5
128	Par Consols (copper), St. Blazey, Cornwall	55½	650
1026	Pendarves Consols (copper), Camborne, Cornwall	3	6⅞ 7½
1000	Pendarves and St. Aubyn (copper), Camborne, Cornwall	5	12
4934	Pennant and Craigwen (lead), Wales	3	3
2048	Pentire Glaze, United (silver-lead), St. Minver, Cornwall	5	9
1000	Pen-y-bank and Erglodd (lead), Cardiganshire	4	6
1160	Perran St. George (copper and tin), Perranzabuloe	22½	25
1024	Penzance Consols (tin), Sancreed, Cornwall	22s 3d	1½ 1⅝ 2
1000	Peter Tavy and Mary Tavy (copper), Tavistock, Devon	2½	10 12
512	Plymouth Wheal Yeoland (tin), Plymouth, Devonshire	6½	6
1000	Polberron (tin), St. Agnes, Cornwall	¼	—
1000	Ditto Preferential	15	—
512	Praed Consols	1	1½
560	Providence Mines (tin), Uny Lelant, Cornwall	—	30
2500	Rhoswydol and Bacheiddon (lead), North Wales	10½	—
10000	Rhymney Iron (iron), Rhymney, South Wales	50	12
10000	Ditto New	7	3
5000	Roche Rock (tin), Roche, near St. Austell	1	1
5000	Rocks Mine (tin), Roche, near St. Austell	5	6 7
2048	Runnaford Coombe (tin), Devon	2½	3½ 4
2048	Snowdon (copper), Carnarvonshire, Wales	3	—
256	South Caradon (copper), St. Cleer, Cornwall	5	200
2000	South Carn Brea (copper), Illogan, Cornwall	10	—
1100	South Dolcoath (copper), Illogan, Cornwall	6	3 4
256	South Friendship Wheal Ann (copper & tin), Devonshire	30	28 30

BRITISH MINES—*Continued.*

Shares.	Company.	Paid.	Price.
256	South Molton (lead), Devonshire	12½	12½
1024	South Plain Wood (copper), Ashburton, Devon	2½	6 7
300	South Speed (copper and tin), Uny Lelant, Cornwall	15	30
9000	South Tamar (silver-lead), Beer Ferris, Devon	1	2½ 2½
256	South Tolgus (copper), Redruth Cornwall	16	155
256	South Trelawny (lead), near Liskeard, Cornwall	31	6½
2000	South Wales Mining Company (lead), South Wales	1	1
256	South Wheal Basset (copper), Illogan, Cornwall	10½	325
124	South Wheal Frances (copper), Illogan, Cornwall	75½	620
256	South Wheal Josiah (copper), Calstock, Cornwall	2	3½ 4
240	Spearne Moor (copper), St. Just, Cornwall	30	40
128	Spearne Consols (tin), St. Just, Cornwall	10	60 61
1024	St. Aubyn and Grylls (copper and tin), Breage, Corn.	2½	5 6
94	St. Ives Consols (tin), St. Ive's, Cornwall	—	80
999	St. Minver Consols (silver-lead), Cornwall	1	6
1000	Stray Park (copper), Camborne, Cornwall	10½	21 22
9600	Tamar Consols (silver-lead), Beeralston, Devon	4	5½
687	Tavy Consols (copper), near Tavistock	8	4
4000	Tyn-y-Worglod (slate), near Carnarvon, North Wales	4	4 5
6000	Tincroft (copper and tin), near Pool, Cornwall	7	11½ 12
128	Tolcenbury (copper), St. Ive. near Liskeard	7½	8
1200	Tolcarne (tin and copper), Camborne, Cornwall	8	5
1024	Trannack and Bosence, St. Erth	1	12 13
1024	Trannack-United Mines (tin and copper), Helston, Corn.	1½	4½
2048	Trebell Consols (tin and copper), Llanivet, near Bodmin	1½	1½
512	Trebarget United (lead), St. Teath, Cornwall	—	—
—	Tregardock	1	5
5000	Tregear Consols (antimony and silver-lead), St. Kew	1	—
256	Tregorden (silver-lead) Wadebridge, Cornwall	10	7 9
256	Trehane (silver-lead), Menheniot	1	15
5000	Treleigh Consols (copper), Redruth	6	2½
1024	Trelissack, Stithians, Cornwall	—	5½ 5½
150	Trelyon Consols (tin), St. Ive's, Cornwall	7½	25
2000	Trenance (copper), Helston, Cornwall	6	7 8½
1500	Tresault (lime qnarries)	2½	3½ 4
96	Tresavean (copper), Gwennap	10	180 200
120	Trethellan (copper), Gwennap	5	18
120	Treviskey and Barrier (copper), Gwennap, near Redruth	130	275 280
512	Trethevy (copper), St. Cleer, Cornwall	7	5
512	Treville (lead), Lewannick	1½	6 7
604	Trevan Consols (tin), Towednock, Cornwall	7	10
100	Trumpet Consols (tin), near Helston, Cornwall	95	80 90
1000	Tyllwyd (lead), Cardiganshire	2	2½
500	Tywarnhayle (copper), Illogan and St. Agnes	60	47½
200	United Mines (copper), Gwennap	300	130
5000	Warleggan Consols (copper), Cornwall	¼	¼
1024	Wellington Mines (copper and tin), Perranuthnoe, Corn.	6½	11½ 12
1024	West Alfred Consols	5	11½ 12
128	West Buller (copper), Redruth, Cornwall	10	750
256	West Caradon (copper), Liskeard	20	97½ 100
128	West Ding-Dong	2	8
1024	West Downs (copper and tin), Whitchurch, Devon	2	2½
512	West Fowey Consols (tin and copper), St. Blazey	40	60
2048	West Goginan (silver-lead), Cardiganshire	1½	1½ 2
1020	West Nantymwyn	—	2
1024	West Par Consols (copper), St. Blazey, Cornwall	10	11
2500	West Polgooth (tin), St. Ewe and St. Mewan, Cornwall	5	7
512	West Providence (tin), St. Erth, Cornwall	10	67½ 70
200	West Seton (copper), Camborne, Cornwall	45	180
940	West Tolgus (copper), Illogan, Cornwall	12½	10
120	West Trethellan (copper), Gwennap, Cornwall	5	20
512	West Wheal Frances (copper), Illogan, Cornwall	5½	14½
1024	West Wheal Friendship (copper), Devon	3	3 4
3275	West Wheal Jewel (tin and copper), St. Day, Cornwall	12	2½
2048	West Wheal Rose (lead), Cornwall	2½	3
500	West Wheal Towan (copper), Illogan, Cornwall	9	14 15
1024	West Wheal Treasury (copper), Gwinear, Cornwall	6½	4
1024	West Wheal Virgin (tin), Sancreed, Cornwall	½	2 2½
1024	Weston (lead)	½	½
5200	Wicklow (copper), Wicklow, Ireland	5	17½
5000	Wicklow (copper and sulphur), Wicklow, Ireland	3	3½ 3½
1070	Wheal Adams (lead), Christow, Exeter	13½	16
1000	Wheal Agar (copper), Illogan, Cornwall	—	5 6
256	Wheal Albert (copper), Cornwall	10	28 29
300	Wheal Arthur (lead), near East Wheal Rose, Cornwall	17	50
2048	Wheal Arthur, Calstock	1	2
3072	Wheal Augusta (tin), St. Just, Cornwall	½	2½ 3
120	Wheal Bal (tin), St. Just, Cornwall	10	14
256	Wheal Benny (copper), Calstock, Cornwall	19½	—
1024	Wheal Bray (copper), Alternum, Cornwall	11½	—
3324	Wheal Calstock (copper), Calstock, Cornwall	9	10
256	Wheal Carpenter (tin and copper), Gwinear, Cornwall	½	4½
268	Wheal Courtenay (copper), Cornwall	20	23
1024	Wheal Crebor (copper), Tavistock, Devon	2½	3
500	Wheal Daniell (copper), Chacewater	5	—
183	Wheal Elizabeth (copper), Redruth, Cornwall	9	52½
1024	Wheal Emily (lead and antimony), near Plymouth	3	5½ 6½
1024	Wheal Fortescue (copper), near Tavistock, Devon	4½	6½
764	Wheal Franco (copper), near Tavistock, Devon	27	10
100	Wheal Friendly (tin), St. Agnes, Cornwall	70	65
128	Wheal Friendship (copper), Devon	—	120
1000	Wheal Guskis (tin and copper), St. Hillary, Cornwall	½	3
4000	Wheal Golden (lead), Perranzabuloe, Cornwall	2	5 6
1000	Wheal Grose (silver-lead, copper, &c.), near Wadebridge	¼	—
1000	Wheal-an-Grose (tin), St. Columb Major, Cornwall	5	5 6
2560	Wheal Harriet (copper), Camborne, Cornwall	1	5 6
1024	Wheal Hamlyn, near Oakhampton, Devon	½	1 1½
2048	Wheal Harris (lead), near Tavistock	½	1½ 2
216	Wheal Henry (copper), Kea, near Truro, Cornwall	—	8 12
256	Wheal Kingston (copper and silver-lead), Stoke Climsland	½	1½
6000	Wheal Langford (copper and silver-lead), Callington	½	2 2½
2000	Wheal Langmaid (lead), Devon	½	1 1½
112	Wheal Margaret (tin), Uny Lelant, near Hayle	79	155
1024	Wheal May (silver-lead and copper), Botes-fleming	1½	1½
990	Wheal Mary (copper), Redruth, Cornwall	14½	7½
512	Wheal Mary Ann (lead), Menheniot	5	66
1024	Wheal Mary Ann (copper), near Bridestow, Devon	—	1½
1024	Wheal Neptune (copper), Perranuthnoe, Cornwall	3½	2
1080	Wheal Oak, near Helston, Cornwall	1½	1½
2000	Wheal Penhale (lead and copper), Cornwall	2½	6
128	Wheal Plenty (copper), Redruth, Cornwall	19	38 39
128	Wheal Pollard (copper), St. Cleer, Cornwall	15½	—
210	Wheal Prospect	4	7
5000	Wheal Providence, South Sydenham, Devon	½	2½ 4
120	Wheal Reeth (tin), St. Ive's, Cornwall	41	150
1024	Wheal Russell (copper), Tavistock	4	4 4½
512	Wheal Selena (copper), Redruth	½	1½
198	Wheal Seton (copper), Camborne, Cornwall	107	235 240
1056	Wheal Sarah (silver-lead), St. Kew, Cornwall	5	—
512	Wheal Sophia (silver-lead), Lezant, Cornwall	6½	7
512	Wheal Spry (copper and lead), St. Columb Minor	½	1
128	Wheal Squire (copper), St. Erth, Cornwall	—	5
1000	Wheal Susan, Breage and Crowan, Cornwall	1	3½
512	Wheal Trefusis (copper), Gwennap, Cornwall	6½	26
1100	Wheal Trescoll (tin), Lanivet, near Bodmin, Cornwall	6½	6
520	Wheal Trelawny (silver-lead), near Liskeard, Cornwall	3½	47½ 50
256	Wheal Tremaine (copper), St. Erran, Cornwall	11	2½
1024	Wheal Tremayne (tin and copper), Gwinear, near Hayle	11	21½ 22
267	Wheal Tryphena (tin and copper), Camborne, Cornwall	40	40
128	Wheal Union (copper), Redruth, Cornwall	—	38 40
1024	Wheal Venton (silver-lead), Liskeard, Cornwall	3½	9½ 10½
910	Wheal Vincent (tin), Alternum, Cornwall	6½	4
128	Wheal Violet (tin and copper), St. Stephens, St. Austell	5	2½
128	Wheal Vlow, Perranzabuloe	3	5
184	Wheal Vyvyan (copper and tin), Constantine, Cornwall	—	60

FOREIGN MINES.

5000	Alten Mining Company (copper), Norway	14½	3
12000	Annotto Bay Mining Association, Jamaica	1	—
15000	Asturian Mining Company (coal, iron, &c.), Spain	15	—
20000	Australian (copper), South Australia	4	2½ 3
6000	Barossa Range (copper), South Australia	1½	½
10000	Brazilian Imperial (gold), Brazil	23	4½ 5
12000	Cobre Copper Company (copper), Cuba	40	34 35
16000	Copiapo Mining Company (copper), Chili	14	5½ 5½
20000	General Mining Association (iron & coal), Nova Scotia	20	13½
5000	Kinzigthal Mining Association (silver), Germany	2	½
5000	Linares (lead), Spain	3	2 2½
4560	Ditto New	3	3
6651	Mexican Company (silver), Mexico	59½	—
20000	Mexican and South American (silver), Mexico	8	1 1½
5000	National Brazilian (gold), Brazil	30	3½
1048580	North British Australasian (copper), S. A. & New Zea.	1	½ ¾
7000	Royal Santiago (copper), Cuba	10	8 9
11000	St. John del Rey (gold), Brazil	15	14½
43174	United Mexican (silver), Mexico	Av. 28½	5½ 5½ 5½
10000	Worthing (copper), Adelaide, South Australia	2	2½ 3

JOINT-STOCK BANKS.

Shares.	Companies.	Paid.	Div. p. cent.	Price.
22,500	Australasia	£40	£1½	£31
20,000	British North American	50	6	43
20,000	Colonial	25	5	10
20,000	Commercial of London	20	6	25
10,000	London and County	20	6	—
60,000	London Joint-Stock	10	6	19
50,000	London and Westminster	20	6	28½
10,000	National Provincial of England	35	6	37½
10,000	ditto New	10	5	11
20,000	National of Ireland	22½	5	18
20,000	Provincial of Ireland	25	8	43½
10,000	South Australia	22½	6	24 3½
20,000	Union of Australia	25	6	35
60,000	Union of London	10	6	12½ 13½

THAMES TUNNEL COMPANY.

The number of passengers who passed through the Tunnel in the week ending Dec. 21, was—No. of passengers, 15,390.—Amount of money, £64 2s. 6d.

NOTICES TO CORRESPONDENTS.

In the "MINING JOURNAL" of the 4th of JANUARY, 1851, will appear the commencement of a SERIES OF PAPERS, to be continued weekly, detailing

The History of Mining,

ITS RISE AND PROGRESS:

together with NOTICES of the EARLY METHODS OF WORKING; ANCIENT and MODERN INVENTIONS, with their subsequent IMPROVEMENTS; comprising also

A SKETCH OF METALLURGICAL OPERATIONS,

from the EARLIEST PERIOD to the PRESENT TIME.

The Great Exhibition.

In the "MINING JOURNAL" will also be given a detailed description, with all necessary illustrations, of every object connected with MINING and ENGINEERING, which may be produced at the forthcoming Great Exhibition.

The Compendium of British Mining,

BY J. Y. WATSON, ESQ., F.G.S.

We have the pleasure to announce, that Mr. WATSON has consented to revise and correct, to the present time, his interesting EPITOME OF BRITISH MINES, for republication in our Journal, and that the first portion will appear on the 4th January next. In the "Compendium of British Mining," it will be remembered, the actual position of the different mines is accurately described, both as to capital and working.

At the end of each year, a copious Index is published, which renders the volume an interesting and valuable record.

"An Engineer" (Bayswater).—Mr. William Cubitt was re-elected president of the Institution of Civil Engineers for the ensuing year. Both Mr. R. Stephenson and Mr. Brunel are members.

EDUCATION FOR MINERS.—Following out Mr. Ennor's idea, in his letter of last week, Mr. D. W. Davies suggests that Sir C. Lemon, and other leading gentlemen of Cornwall, would render good service to the mining districts, were they to set on foot subscriptions for establishing reading-rooms, with a library of suitable works, so as to enable the rising generation of miners to combine scientific knowledge with their daily practice. No doubt, the first step in the way of improvement is to provide the means of instruction, which it would not be difficult to unite with such inducements as are likely to operate with the class who are engaged in practical mining; at the same time, avoiding the error which has converted mechanics' institutes into resorts for almost any body but mechanics. Perhaps the combination of evening classes with a reading-room would be most calculated to attract and confer substantial benefit, at the cost only of a trifling subscription as a token of membership, and to such reading-rooms Mr. Davies is pleased to observe, the *Mining Journal*, and other periodicals, would be a desirable provision. Of the benefit of such an institution no question can be entertained, though we do not think it needful to disparage learned and scientific bodies, because their practical knowledge of mining may not be equal to that of a Cornishman, any more than the latter is underrated for not being able to clothe his ideas in the phraseology of science.

"R."—The Timber Preserving Company, we believe, purchased Mr. Margary's patent. Apply to Mr. Duke, at the office, 50, King William-street.

"Engineer" (York).—We believe it is contemplated to form a company for the purpose of bringing into practical operation the invention of Messrs. Cunningham and Carter. The large working model can be seen at Messrs. Ingram's manufactory, City-road, where further information can be procured.

"Amateur."—Fictitious gems are prepared in a variety of ingenious methods; sometimes stones of inferior value are modified in their colour by heat, and substituted for more valuable gems, as in the case of the zircon, which is sometimes rendered colourless by heat, and substituted for the diamond. The colours of the carnelian are principally given by heat. In Phillip's "Mineralogy," it is stated that carnelians, when found, are of a blackish olive, passing into a grey. These are, he says, first exposed to the sun for some weeks, and then placed in earthen pots, and subjected to heat, which gives them the colours which constitute their value in jewellery.

"A Shareholder" (Tynemouth).—The Dalriew Mining Company was formed for working copper and lead mines in the lordship of Builth, near Rhayader, Brecon. We are not aware what progress has been made in developing the property—or, indeed, where the information can be obtained.

"A Mine Agent,' (Redruth).—The new Mining Laws of Spain were published in the Journal of the 28th April, the 5th and 12th May last.

The author of "An Appeal to the British Public; or the Abuses of Smithfield Market, and the Advantages of a new Central Cattle Market, fairly considered," has, doubtless made as good a plea for the non-removal of the market as the case he upholds will admit, and better, we fear, than its intrinsic merits deserve. Yet, in advocating a plan for a new central market, which he says the Corporation of London intend to construct, he admits the reality of the evils complained of. Finding that these evils will no longer be tolerated, the Corporation, determined to retain their hold on the profits derivable from the nuisance, now promise that space shall be afforded for a cattle market as nample as can be desired, but which must be central still. We should be glad to know a little more of the civic plan before we agree in the conclusions of the pamphleteer, though we are far from underrating the difficulties in the way of a satisfactory settlement. At present, the strength of the Corporation seems to consist in the fact, that no plan yet proposed can be deemed perfectly satisfactory.

"An Adventurer" (Liverpool).—We must decline interfering in the matter. Apply to Mr. Evan Hopkins, who will either inspect the mine himself, or recommend some competent person, in whom confidence can be placed.—The address of Mr. R. P. Collier, the author of the "Law of Mines," is 4, Harcourt-buildings, Temple.

THE SLATE MANUFACTURE.—We have received a communication from Mr. D. W. Davies, in reply to a private correspondent, on matters relative to the conduct of slate quarries, already noticed by us in the Journal. The letter of Mr. Davies is of too great length for insertion, bearing in mind the restricted interest attaching to its contents. We will, nevertheless, give substantially Mr. Davies's answer to the questions submitted to him. The first is, whether the streams of water so frequently met with in Ireland and Wales are not profitably substituted for steam. Mr. Davies is of opinion that the advantages of water-power are often overrated, and more than balanced by the expense of making ponds, cutting gulleys, fixing troughs, &c., to say nothing of the cost of procuring distant springs, and the delay and inconvenience caused by severe frost. The question is only to be decided by a fair calculation of the relative expense of supplying one engine with water, and the other with fuel, keeping in remembrance also the prospect of future convenience promised by each. His conclusion is, that serviceable as water is, its available agency as a substitute for steam is apt to be overestimated, and that unless it is both abundant and conveniently situated, steam is to be employed in preference. The second question relates to the wages received by the workmen at the Welsh quarries, on which Mr. Davies thinks the inexperienced are very likely to err. The general impression seems to be that, when the men earn but little money, the masters are getting their work done cheaply, their only test being the amount of wages earned. The fact, however, is, for the most part, quite otherwise, and, as Mr. Davies remarks, it is when the men earn little money that the master pays the most extravagant wages; for when the men are not paid a fair price, their study is to do as little work as possible, since, by hard work, their position will be in no degree raised. As soon as the stimulus of higher pay by any accident is presented, they show every disposition to make the best use of their time—a fact in itself disclosing the secret of their inefficiency at other seasons. If the speculator hopes to realise a profit, it must be by the aid of industrious and skilful workmen, who always merit good wages, whilst the lazy and inefficient are never worthy of even indifferent wages. Mr. Davies, in conclusion, strongly advises the intending speculator in slate quarries to take counsel with a thoroughly qualified practical man before he embarks in his enterprise, instead of taking the chance of being afterwards apprised that his engine-house, shafts, &c., are erected in the wrong place, and that the thousands he has spent have been lavished upon a worthless speculation.

The paper On the Use of Caustic Lime, instead of Limestone, in Blast-Furnaces; Mr. Mitchell, On the Treatment of Copper Ores; Mr. Richardson, On the Inspection of Mines, and Miners' Reading Clubs, will appear in our next Journal.

*** We must impress upon our correspondents, the necessity of invariably furnishing us with their names and addresses—not that their communications should, consequently, be noticed, but as an earnest to us of their good faith.

*** It is particularly requested that all communications may be addressed—

TO THE EDITOR,
Mining Journal Office,
26, FLEET-STREET, LONDON.

And Post-office orders made payable to Wm. Salmon Mansell, as acting for the proprietors.

THE MINING JOURNAL

Railway and Commercial Gazette.

LONDON, DECEMBER 28, 1850.

The MINING JOURNAL is published at about Eleven o'clock on Saturday morning, at the office, 26, Fleet-street, and can be obtained, before Twelve, of all news agents, at the Royal Exchange, and other parts of London.

We have occasionally endeavoured to place before our readers the considerations upon which we rest our opinion, that the present full supply of gold, both for mercantile and currency purposes, will not materially affect the standard of value throughout the commercial world. There is no new aspect of the question, that we are aware of, requiring the application of a new argument; but if there is nothing new in the substantive statements which countenance the idea of a permanent depression in the value of gold, there is an attempt to give the old arguments a momentum to which intrinsically, and of themselves, they are in no sense entitled. Among other things, it is assumed that the *placers* which are now being actively wrought on the western coast of the North American continent may be expected to pour out into the markets of the world some 10,000,000*l.* sterling annually. We may be in error in calling this alleged large supply of gold from the new State, which has recently entered the American confederation, a wild and unauthorised statement, but certainly the returns of the three years during which the deposits in California have been gathered up, and brought to market, teach us that about a quarter of that heavy annual sum would more nearly describe the total produce of the mines than the larger mass, which exists in figures only, and which never has arisen, nor is ever likely to arise, in that district, however skilfully and laboriously it may be sought for. But if it were admissable, by supposition, to raise the annual produce of the new mines 5,000,000*l.* sterling (a great sum, and equal to the whole property tax of the United Kingdom), with what little observation, with how little disturbance would that golden shower fall into the great currency streams of the world, the tenth part of whose commerce has never yet been represented by its money. The precious metals are wanted in much greater abundance than they can at present be obtained—wanted, that is, to give increased soundness and vivacity to the transactions of an ever-moving commerce. Moreover, the population of the world, the luxury of the world (we do not mean its waste or its extravagance), as well as the universal interchange of its produce and manufactures, are rapidly increasing; and if upon the greater industry of all nations there is not an adequately full remuneration, and of this gold and silver are the most acceptable and assured pledges, then, wanting that reasonable encouragement, the course of commerce, in all her windings, would be primitive, heavy, and unilluminated. We think, therefore, that we can well stow away, can find admirable uses and full occupation for, all the gold likely to be won from the shores of the Sacramento and its tributaries, or forced from the ranges of the Ural. This is our firm conviction, and we as little fear a superabundance of national wealth as we fear a sensible depreciation in the value of gold, on account of its abundance. Considering the new and more sustained strength with which commerce, in many regions, is stretching out her arms, and considering also the multitude of new faces which are daily flocking to the homesteads of the entire world, we are perfectly satisfied that the old stock of gold will be lamentably insufficient for either the necessities or the convenience of the new order of things upon which society is at the present time everywhere entering.

It cannot have escaped notice that, throughout the whole agitation for a reform in mining affairs, the reputation of mine brokers and agents has been unceremoniously attacked, whenever it is attempted to make out a strong case in opposition to things as they exist at present. Every real or supposed evil in connection with such negotiations is attributed at once to the chicanery and bad influence exercised by this much maligned class, whose malversations, it is believed, nothing less than a Mining Exchange will suffice to cure. With all deference to those who have come to this benevolent conclusion, it is but right that a few plain facts connected with the subject should not be lost sight of.

First, then, it is sufficiently known to those conversant with the matter that the greater number of the dividend mines in Cornwall and Devon are held by private capitalists and clients of the principal mining agents, and held, too, for investment, and not generally for jobbing purposes. These clients, for the most part, know nothing of mining; they, of necessity, rely on the judgment and experience of their agents, who act for them in all cases of emergency; and that the latter have acted with no common prudence and ability may be gathered from the fact, of which we have had very credible testimony, that the profits made this year have been enormous, many shares having risen cent. per cent., yielding to the clients of individual agents or brokers a gain of 50,000*l.* and upwards. By degrees, the general public came to perceive the value of mines, and the possibility of sharing in the good things they produce; while, as the best means of ensuring a slice for themselves, it seems to be thought advisable to make an indiscriminate onslaught on the character of mining agents.

To ascertain the real value of this clamour, it is needful to take a slight retrospect. It will not be forgotten that, a few years ago, mining was in a dreadfully depressed condition; engines were daily advertised for sale, and hundreds of persons thrown out of employment. Many shares were unsaleable at any sacrifice, and others, though good, were looked upon with distrust. Who, in that state of depression, supported the mining interests? Did the general public? No; it was left for the present mining capitalists, and the clients of the principal agents, to stand the brunt of the struggle; and now that a season of prosperity has arrived, it would be rather too much to expect that these agents should not prefer the interests of their clients, with which their own are identified, even to the luxury of joining in the outcry for what may, after all, turn out to be a gambling market for mines in the Stock Exchange. Nothing is more certain, that if mining had continued in its former depressed state, those who constitute themselves censors of brokers and agents would have been infinitely less anxious for a change, since the envious feeling by which they are now stirred would have lacked an adequate stimulus. Even on the score of the difficulty of obtaining true prices of shares, it may, with perfect fairness, be said that those who are loudest in their complaints never dream of the possibility of their having themselves to blame for not using the proper means, and neglecting to apply for information in the right quarters.

In this brief elucidation of the mystery of the present clamour *for* a mining market, and *against* mining agents, it is not, of course, meant to be affirmed that abuses do not exist. On the contrary, there are serious ones to correct, and it is much to be desired that the measures now in progress for effecting a change will be attended with the beneficial results promised. If the Stock Exchange Committee, acting in concert with the principal mine agents, are able to root out every obnoxious practice connected with mining negotiations, without substituting something as bad of their own, they will be justly entitled to gratitude and praise, since they will be adopting the very best course for upholding legitimate speculation, and, at the same time, repressing the evil of a mining mania, which, like the railway fever of 1845, would, though prosperous for a time, end in disappointment and ruin.

The late Message of the American PRESIDENT will justify a few additional remarks, if only on account of the bearing of that portion which relates to our manufacturing interests. It will be observed that the PRESIDENT starts with the assumption, that "all experience has demonstrated the wisdom and policy of raising a large portion of the revenue, for the support of Government, from duties on goods imported." So far from being inclined to agree with the axiom laid down by the PRESIDENT, we should say that experience has demonstrated something in a very different form, if not the reverse of, what is stated. A duty may be so high as to bring no revenue. It may be so moderate as to embarass trade most injuriously, and bring but a small revenue; but which, whether large or small, is really paid by consumers, since, for the increased value caused by the duty, the latter must give exactly so much more labour for the goods they exchange as the import amounts to, or than they would find necessary if no such duty was imposed. It is not possible, by any process of taxation by import duties on articles of general consumption, to give an "incidental advantage"—to borrow the phrase of the PRESIDENT—to any section who may be producers of similar articles, without a corresponding disadvantage to the other sections of the community, outnumbering those who may be benefitted in a proportion of about 500 to 1.

The fallacy of the doctrine espoused by the PRESIDENT is becoming, in a commercial country, every day more apparent. Let the case be supposed of a man who grows corn, but who wants iron. For five quarters of corn he gets, if untaxed, 1 ton of iron; if taxed, he has to give six quarters, and has, therefore, to lose one-sixth of his labour, and all consumers united lose so much as constitutes the amount of revenue—say, one million—collected from iron. If the producer of iron at home derives an "incidental advantage" at all, it must be to the amount of the one-sixth quarter of corn, or in the aggregate one million, less the costs of collection; yet inasmuch as this advantage is gained at the expense of all other classes, and besides being vicious in principle, tends to limit the supply, its consequent effect must be to discourage the industry of a country to the extent of its operation. Further, by an import duty on iron, or an article of general consumption, the "incidental advantage" in question must have the effect of protecting the producer of that article from competition, or a certain amount of it; and as soon as any competition to which such article would or might be liable is checked, the duty becomes a tax on consumers, who are quite as capable of judging of the value of any "incidental advantage" as the producers themselves, and, consequently, of their own loss.

With regard to the iron trade of the United States, a duty of 30 per cent., raised to nearly 60 per cent. by other expenses, is not, it appears "incidental advantage" enough for American ironmasters, although they

stimulated their make from 350,000 tons in 1842 to 800,000 tons in 1847, under the protective influence of this duty, owing chiefly to the demand for railroads in the United States and abroad; this demand, of course, causing the very costly exertions made to create this immense increase in so short a time. A collapse naturally follows, and moderate prices will not yield sufficient incidental profit to continue a make of 800,000, and increase in a like ratio. Is there in this result anything surprising? Is it not a natural consequence of over-trading?—and can anything be more outrageous than for those ironmasters, who made unwise and onerous contracts in 1846 and 1847, by which they were embarrassed in 1849, and who opened mines so expensive to work in, with a view to retain in their grasp the inordinate profits of 1847, now to call upon the United States Government to make every one who wants iron contribute as many additional dollars as will enable them to discharge their unwise debts and liabilities? If such a demand is to be listened to, why reject the appeal of the sufferers from any other species of over-trading? Are the energy, industry, and labour of 999 out of 1000 citizens to be cramped and fettered, because the Pennsylvanian iron-makers have gone recklessly onward? Let the PRESIDENT, in his protective wisdom, induce the Legislature to make a law that every one should purchase half a ton of iron, and sink it in the Atlantic? The effect of this sagacious legislation would be that the demand thus factitiously created would raise the price to what it was in 1847, and the ironmasters would rejoice, and get rich; they would possibly even pay their engagements—a rather hazardous prediction, perhaps, considering the punic faith of Pennsylvania in monetary matters. Yet such a law would, to a certainty, not be more unreasonable, absurd, or unjust than the tax, to the same amount, which they wish the Government to impose; and it would have this advantage, that the burden would be borne and got rid of at once, while the ironmasters require it should be permanent—not only to enable them to carry out improvident speculations, but to guarantee them from the effects resulting from ill-digested, short-sighted bargains in future.

PROGRESS OF MINING DURING THE PAST YEAR.

BY J. Y. WATSON, ESQ., F.G.S.

In our review of 1849, we stated that various circumstances had combined to render it the most extraordinary year in the annals of mining, whether in regard to the amount of dividends paid by the mines, or in the general rise in the price of shares. The still greater publicity, however, given to mining statistics during the past year, the great prosperity, not only of the old dividend mines, but of many new setts taken up since our last review, have rendered 1850 far more remarkable in mining events than any previous year. To enter into the merits or demerits of one-half the new schemes and speculations of the last 12 months would be a task indeed, and we shall endeavour to confine our remarks, as much as possible, to "facts and figures," respecting such as we have been able to gather information upon, fully persuaded they will speak for themselves, without the aid of too much comment. We cannot, however, avoid observing (without taking the least credit for any great sagacity), that what has come to pass, in regard to the extension of mining was predicted by us many years ago. In our review of the year 1846, we stated, that "a new mining era had commenced," and that if Cornishmen, and those connected with the management of mines, would render assistance in giving statistics, as well as every particular connected with their mines, so that the general public might become acquainted with their merits, we should have the mining interest as it deserved to be—one of the most important features in commercial enterprise. And what is the fact? From being confined to a few individuals, with an extremely limited market, mining shares are taking the lead of railways throughout the kingdom, and most of our principal towns have markets of their own.

With these few remarks we proceed to give the—

DIVIDENDS PAID FOR TWELVE MONTHS, ENDING DEC. 31, 1850, SHOWING ALSO THE PAID-UP CAPITAL AND MARKET VALUE FOR THEM:—

Mines.	*Paid-up.*	*Market value.*	*Div. p. sh.*	*Amount.*
Devon Great Consols	£1	£250	£40	£40,960
East Rose	50	600	125	16,000
South Basset	20½	325	55	14,080
West Buller	10	750	102½	13,114
Par Consols	55⅜	650	100	12,800
North Pool	45	400	127½	12,750
South Frances	67	620	89½	11,098
Carn Brea*	15	120	9	9,000
Treviskey	130	280	73	8,760
Seton	107	240	30	5,940
Trelawny	3	50	11	5,720
Mary Ann	5	66	11	5,632
Bedford United	2⅛	6⅜	1	3,000
South Tolgus	16	160	14½	3,712
Tremayne	9⅜	22	3½	3,328
Levant	—	175	36	4,000
Tincroft	7	12	½	3,150
Stray Park	40	22	3	3,000
Wheal Reeth	41	—	25	3,000
North Basset	—	20	½	3,000
North Roskear	5½	160	20	2,800
Balleswidden*	9	—	1½	2,844
Wheal Margaret	79	155	28	3,136
Wheal Friendship	—	—	—	2,880
Providence Mines	—	120	22	2,570
Alfred Consols	2½	20	½	2,048
Fowey Consols	40	30	4	1,976
West Caradon	20	100	7½	1,920
Condurrow	20	115	5	1,280
Wellington	6¼	12	1	1,024
West Providence	10	70	2	1,024
Botallack	182	200	10	1,000
United Mines	300	—	10	1,000
Great Consols	1000	250	10	960
Trehane	1	15	3½	896
Wheal Lovel	—	15	2	860
Spearne Consols*	10	60	5¾	746
Comfort	45	100	6	768
Lewis	17	20	½	500
Wheal Friendly	—	—	—	500
South Caradon	5	200	3	384
St. Ives Consols	—	—	3	282
Penzance Consols	1⅛	—	⅛	128
Great Work*	—	—	—	—
Total dividends paid in 42 mines				£213,570

* In Balleswidden, Great Work, and Spearne Consols, dividends are either due, or have just been declared, but the accounts have not yet reached us; and in regard to Carn Brea, we are not certain whether another dividend has been declared or not. The first column in the list shows the amount of paid-up capital per share, the second the market value, and the third the dividend paid per share in twelve months—it will be easy, therefore, to calculate the rate of interest paid by any particular mine.

DIVIDENDS PAID ON WELSH MINES.

Lisburne	75	—	—	£10,500
Gogiman	5	—	—	2,500
Bryntan	2½	—	5	250
Cwmystwith	60	—	5	640
Total on Welsh mines				£13,890

DIVIDENDS PAID ON FOREIGN MINES.

Cobre (copper)	40	34	7	£84,000
St. John del Rey	15	15	3	33,000
Copiapo	15	5¼	—	4,000
Total on foreign mines				£121,000

We give, for the sake of comparison, the dividends paid in British mines in former years:—

In the year ending	December, 1845	£215,450	0	0	in 18 mines.
Ditto	December, 1846	158,838	0	0	in 28 mines.
Ditto	December, 1847	155,381	0	0	in 30 mines.
Ditto	December, 1848	129,024	0	0	in 22 mines.
Ditto	December, 1849	185,741	18	0	in 38 mines.
Ditto	December, 1850	213,570	0	0	in 42 mines.

The mines named in the first list, with the exception of Devon Great Consols, are managed upon the Cost-book Principle, exempt from the operations of the Joint-Stock Act; and so simple in its construction, and safe in its *modus operandi*, that it may not be out of place here to give a few of its leading features, especially as the general public are not so well acquainted with its operations as the regular readers of the Journal, in which it has been so often treated upon. The grand feature is, that shareholders manage *their own* business, but they generally depute two or three of their body to act as a committee. Rules are framed, and subscribed by all—the principal being, that meetings shall be called every *two months*, when the accounts of expenditure shall be produced, showing every payment made, with proper vouchers, and also what will be required for the operations of the ensuing two months. When calls are required, they are made by the shareholders, and in dividend mines the profits are divided at these meetings. It will be seen, by this plan, when properly carried out, no liabilities can accrue, and any shareholder has the liberty of retiring from a company by paying his proportion of debts to the day of meeting.

It will be observed that, in 1845, the dividends paid on 18 mines amounted to 215,450*l.*—a sum nearly equal to that paid on 42 mines this year (taking into account those not yet received); but in 1845 the Devon Great Consols first came into play, and the dividends on Wheal Maria alone were 55,296*l.*; East Rose also was in its zenith, and paid 52,864*l.* (making 160,000*l.* profit paid in six years); these two, therefore, paid more than half the whole amount divided in 1845, and 51,200*l.* more than they have paid in 1850—the falling off being chiefly in East Wheal Rose (from 52,864*l.* to 16,000*l.*). This clearly shows that whilst a few of the old mines have fallen off, the profits have been greater in others, and more generally diffused throughout the mining districts. Among mines in the list of 1849 were Great Polgooth, 5504*l.*, Tamar Consols, 5760*l.*—neither of which has paid profits this year. The latter company, to provide capital for their smelting-works, made a call of 9000*l.*

The following list will show the greatest rises in price during the year, taking the quotations from the Share Lists of Dec., 1849, and of the present time:—Alfred Consols, 12*l.* to 100*l.* per share, being a rise of 88,000*l.*; Bedford United, 4½ to 6⅜, or a rise of 3000*l.*; Condurrow, 85*l.* to 115*l.* per share; Devon Great Consols, 190*l.* to 250*l.* per share, or a rise of 60,000*l.*; East Pool, 65*l* to 150*l.*; East Tolgus, 4½*l.* to 20*l.*; Grambler and St. Aubyn, 10*l.* to 40*l.*; South Tolgus, 100*l.* to 160*l.*; South Basset, 210*l.* to 330*l.*; South Frances, 300*l.* to 620*l.*; Tresavean, 95*l.* to 200*l.*; Treviskey, 135*l.* to 280*l.*; Wellington, 7½*l.* to 17½*l.*; West Buller, 380*l.* to 750*l.*; West Francis, 3*l.* to 15*l.*; West Providence, 14½*l.* to 70*l.*; Mary Ann, 33*l.* to 65*l.*; Wheal Tremayne, 11*l.* to 22*l.*; Holmbush, 8*l.* to 22*l.*

Among new mines not quoted in last year's list, and many of them not having been set to work at that time, East Leisure has advanced from 4*l.* to 35*l.* per share; Wheal Venton, 1½*l.* to 10*l.*; Trannack and Bosence, 1*l.* to 15*l.*; Chiverton, 1*l.* to 20*l.*; St. Aubyn and Grylls, 1*l.* to 5*l.*; Merilyn, 2½*l.* to 5*l.*; Butterdon, 1*l.* to 8*l.*; West Alfred, 5*l.* to 12*l.*

The great prize of the year has been Alfred Consols, having, without exception, the finest course of ore of any mine in Cornwall, and shares in which have risen, as will have been seen above, from 12*l.* to 100*l.* per 1024th. In the same neighbourhood, West Alfred and Great Alfred have been set to work, and from both great things are expected. In the former we understand pitches have already been set.

In the Redruth and Camborne districts, whilst the old mines of Wheal Basset, Wheal Buller, South Tolgus, South Frances, and North Pool, have been paying large dividends, several young mines, showing great promise, have been put to work; and in another year we hope to see good results from such as Trefusis, West Tolgus, North Buller, East Buller, East Leisure, East Tolgus, Wheal Daniel, Pendarves Consols, Gustavus, Mill Pool, &c. &c.

In the tin districts, Tremayne and West Providence have risen greatly—the former from 11*l.* to 20*l.* per share, and the latter from 14½*l.* to 70*l.*, and both holding out good prospects of continued dividends. Wheal Lewis has paid her first dividend this year, and the adjoining mine, Trannack and Boscence, has commenced sales of ore, with great prospects of a good mine; whilst Trebarvah has risen from 1*l.* to 5*l.* per share.

In the neighbourhood of Liskeard, Mary Ann carries off the palm, the shares having risen from 33*l.* to 65*l.* Trelawny remains stationary, and Trehane has declined, owing to the temporary cessation of dividends. To the north of Trelawny, Wheal Venton, set to work during the year, is turning up a prize, and shares have advanced from 1*l.* 10*s.* per 512th to 20*l.*, or 10*l.* per 1024th, into which number of shares the mine is now divided. Butterdon, to the north of Venton, is also doing well. Other setts in this district are about being taken up, all on the same lode. For Penhawger a company has already been formed. Herodsfoot has been under a cloud; but the south ground is now becoming very rich, and, as the mine is yielding a monthly profit, we hope to see it in the dividend list of next year.

In the Tavistock and Callington districts, the East and South Tamar Mines are steadily progressing towards profitable results, whilst several new promising mines have been started—such as Crebor, Sheba, &c. Holmbush is again proving herself a rich mine, and shares have advanced from 2*l.* to 20*l.* Of the Devon Great Consols little need be said, except that although dividends to the amount of 40,960*l.* have been divided amongst the shareholders this year, such are the extraordinary riches of the mines, that a larger amount of profit is calculated upon for 1851. At Bedford United there has been a rich course of ore in the 103 fm. level, yielding 10 tons per fm. for several months, and large reserves of ores are accumulating at Wheal Marquis. The great feature, however, and upon which the rise in the shares has taken place, is the expectation of cutting the Tavistock lode, and which may be reached in about a month, the cross-cut towards it having been commenced several months ago. Lamherooe has greatly improved, and a good lode met with.

In South Wales mining is becoming very general, and several mines of promise are at work—a long article upon many of them appeared in last week's Journal, and it is needless to refer to them again. Among those managed in London, the most favourable appear to be Cefn Bruno, shares in which have risen from 6*l.* to 50*l.*, Cwm Erfin, Esgair Llee, East Daren, &c. In North Wales, Bryntail has become a dividend mine during the year, and many others of great promise have been started. The Lloc Mines, near Holywell, belonging to a private company, have, we understand, made upwards of 10,000*l.* profit in twelve months; and the adjoining mine, Merilyn, on the same lode, and from which some poor men raised in a few yards 13,000*l.* worth of lead ore, has been purchased for a large sum by a London company, and vigorously put to work.

The extensive mines of Black Craig, in Scotland, upon which a large outlay has been made, have, within the last few months, been taken up by a London company, in connection with some gentlemen in the north of England, and where the lode is more developed under the old workings, it appears probable that large profits may be realised. Cairnsmore Mine, in the same neighbourhood, belonging to the Kirkcudbrightshire Company in London, is now working to a profit; and we may have the pleasure of seeing it in the dividend list ere long. It is in contemplation, we understand, to put several mines to work in Scotland; at present, the number is very limited.

There are, doubtless, many other young mines in various stages of development, and with appearances promising success; but many of these are either worked by private companies, or we have not known how to obtain information respecting them. We mention this, because, if we are charged with errors, either of commission or omission, they have not been intentional. Among those spoken well of, but of particulars of which we are ignorant, are Warleggan Consols, South Plain Wood, Wheal Golden, Treville, Tolcarne, Pendarves and St. Aubyn, Wheal Susan, Balnoon, West Ding Dong, &c.

The Great Wheal Baddern Mine, near Truro, worked by a Manchester party, is said to be a most promising concern, and likely to pay dividends soon. Shares have risen from 20*l.* paid to 100*l.* The same parties are working the Great Rocks, Wheal Unity, and others. The Phœnix Mines have turned out remarkably rich this year; and other setts in the neighbourhood have been taken up.

In Australia, the London companies as yet have not done any good, and whilst 20 per cent. can be made at home, an opinion seems to be entertained, that it is foolish to go mining so far off, and have, as it were, neither control over management, or means of testing reports.

May the year 1851 be as prosperous as 1850 has been to "One and All!"

MINING IN FRANCE AND BELGIUM.—The year 1850 has been a prosperous one to mining adventurers, both in France and Belgium. The forges of St. Dizier and St. Etienne have been in full blast nearly the whole of the closing year, and the colliery districts of the Loire, Rive de Gier, Grand' Combe, d'Anzin, Alaix, Valenciennes, &c., have been in regular work, and good prices obtained both for iron and coals. In Belgium the progress has been greater than has been known for many years. The founderies of Liege, Charleroi, Veviers, &c., have seldom been so active, not only for home consumption, but for exportations, for railways, bridges, and other purposes, whilst the demands for arms to Prussia, Denmark, and the north, have been very large. At Mons and the coal districts, the demands for bitumen have exceeded those of former years.

Original Correspondence.

THE DEATHS IN MINES DURING THE PRESENT YEAR.

SIR,—A reference to your weekly records shows that the loss of life in mines continues without much diminution. The following statement is extracted from your Journal:—

	1850.	1849.	1848.
Killed by explosions	172	253	236
Killed by falls of the roof	194	154	163
Killed by accidents in shafts	101	90	70
Killed by other casualties	70	68	78
Total	537	567	567

Anticipating that your next paper will contain, at least, the average number of deaths, 10 must be added to the first column, which will make the number of the miners killed during the present year amount to 547, just 20 less that in the two preceding years. There is some cause for congratulation in the diminished mortality caused by explosions, there being a difference of upwards of 80 deaths in favour of this year. The number of explosions producing fatal consequences were 69 in 1848, 52 in 1849, and this year there have been 43. We may fairly presume that this diminution in the number of accidents from this cause, and the decreased fatality which has resulted from those which have happened, is to be ascribed, in a great measure, to the increased attention which the ventilation of mines has received, and it is to be hoped that these indications of practical improvement will be confirmed and extended.

In devising remedies for these evils, the Government authorities and Parliamentary committees have confined their inquiries too exclusively to explosions, and have not attached sufficient importance to those less obtrusive, but constantly occurring, causes of sudden death which produce by far the greatest amount of suffering. It appears, from the above statement, that whilst the deaths from explosions have been considerably diminished, those arising from other causes have been very much augmented. During the present year, it appears, that those killed by falls of the roof even exceed those destroyed by explosions, and that when compared with the two preceding years, deaths from this cause are on the increase. That very many of these shocking, but too common, accidents might be prevented, no one practically conversant with the subject can reasonably doubt. The evil is evidently forcing itself prominently on the attention of the public, and urgently demands the especial notice of the Government inspectors. Many cases occur which are not reported in the local newspapers from which you compile your weekly obituary, and the number of deaths from this cause recorded in your columns are necessarily far short of the reality. Were the inspectors to attend the inquests held on the bodies of the unfortunate sufferers, examine the mine, and institute an impartial and searching inquiry into the real causes, there can be no doubt but that it would be followed by beneficial results, and be highly satisfactory to the colliers and miners.

There is also, unfortunately, an increase of the dreadful deaths arising from accidents in shafts. Several of these have arisen from the absence of fences round the top of disused and other shafts; and children and other persons, unconnected with the mine, have consequently fallen in and been killed. In cases like these it is very difficult to reconcile the "accidental death" verdicts of coroner's juries with notions of justice, or even of common humanity. Leniency to one party is death to the other; and, although no one likes the invidious duty of informing against his neighbour, it is to be regretted that in many districts the laws in this matter are so utterly inoperative, notwithstanding the terrible consequences which ensue on their being disregarded.

Twelve of the deaths which have occurred in shafts have been caused by the fracture of the chains, or ropes, whilst the sufferers were ascending or descending the pit. Chains are most unsuited to such a purpose; and it is to be deeply regretted that in some districts there is such a prejudice in their favour, and that they should be so generally preferred to the flat rope. The unfitness of chains was instanced by Mr. John Evans and Mr. Clough, in their evidence to the coroner's jury which sat to inquire into the cause of the deaths of the three men who were lately killed by the breaking of a chain at Dowlais. "Mr. Evans spoke to the chain being in good repair; and Mr. Clough, the foreman of Messrs. Brown and Co., who had made the chain, testified that it had been proved in the usual manner before being sold to the Dowlais Iron Company." This evidence is perfectly consistent with the writer's experience, who has frequently witnessed the sudden breakage of chains on severe railway inclined planes, immediately after a thorough examination of every link by competent persons. The high estimation in which the chains made by Messrs. Brown and Co. are deservedly held, renders the evidence the more valuable, inasmuch as it shows that, however good the quality of the iron, and however faultless the manufacture, chains are not to be relied on, and are ill-calculated for such a purpose.

In connection with this subject, it is deeply to be regretted that Mr Fourdrinier's patent safety apparatus was not in use where these 12 men were killed, as, had such been the case, their lives would most probably have been saved. The expense of adopting it does not, we understand, under ordinary circumstances, exceed 10*l.*; and the annual payment for the patent right is from 5*l.* to 20*l.* per annum, according to the depth of the shaft—an expense totally incommensurate with the benefits obtained, and which would probably be saved to many times the amount by the prevention of accidents, which are destructive to property as well as to human life. This truly valuable invention is being generally adopted in the large collieries of the north of England—the number of the apparatus either at work, or ordered, being upwards of 100; and it is highly satisfactory to know that in every instance in which its capabilities have been tested, it has been most completely successful in accomplishing the object of its design.

With the commencement of the new year, we may hope to see or hear of the administration of the Act for the Inspection of Mines, and trust that some good will result from it, not only in diminishing the loss of life, but also as a means of collecting statistical data regarding the mines and mining operations of the country.—J. RICHARDSON, C.E.: *Neath, Dec.* 23.

ON THE ECONOMICAL APPLICATION OF THE WASTE GASES FROM BLAST-FURNACES.

SIR,—In reference to Mr. Hu. L. Damsel's letter, published in last week's Journal, it appears singular that so trifling a decrease in the top of the furnace, caused by the iron cylinder, should be sufficient to account either for the scaffolding or decreased make of iron. We well know that a furnace will suddenly alter in its working and driving without any apparent cause, and such changes may be more owing to the chemical combinations going forward amongst the materials than to any alteration in their mechanical arrangement. A few degrees of heat, more or less, must very seriously interfere with the chemical operations going on in the body of the furnace; and it is very probable these changes and combinations in themselves both create and absorb heat, and, therefore, any interference or irregularity in the process must be very important to the proper working of the furnace. The first chemical action upon the ore, or mine, after it is charged in the furnace, is the converting of the *solid* oxygen into a *gaseous* compound, which would infer the abstraction of a vast amount of active heat, cooling the upper region of the furnace, and preventing the more fusible materials melting and running amongst the interstices of the coke, and ultimately causing the scaffolding and general derangement of the whole process. The melted ironstone, whenever this evil occurs, as it descends into the body of the furnace, or great laboratory, parts with its oxygen, and becoming thereby less or quite infusible, and cementing the mass of materials together, forms the scaffolding alluded to. As the materials beneath are consumed by the blast, a hollow space is left, and the direct action of the heat either melts the scaffold, or arch, or the weight of the superincumbent load breaks it down, causing what are called slips. While this is going forward, the chemical action, and its consequent combinations, is destroyed. The blast acts upon the general body of materials in the lower part of the furnace, which are usually protected by the cushion of carbon in the hearth on which they rest. A black cinder, or glass of iron, is the result, and the whole arrangement completely destroyed. In some cases this cinder might be used over again with advantage, as it frequently contains a great per centage of iron. Should, however, the cylinder, as at present used, induce these evils, it might be made the present full size of the furnace, and a space all round, at least 8 in., be taken out of the lining for collecting the gas. A less space than this would restrict the supply of gas to the boiler, &c.; the lining round the top of the furnace would still be sufficiently strong.

When a furnace suddenly reduces its make from 150 to 120 tons of iron per week, it may arise from one of two causes; the burthen may be re-

duced, giving a larger proportion of coal, or less blast be driven into the furnace. In the latter case no scaffolding or general derangement would follow, and it does not appear that this, therefore, is the cause. On the contrary, it is very probable that the abstracting or drawing out of the gases causes *more air, or blast, to enter the furnace*, and this may render necessary such an alteration of the burthen as will account for the reduced make. If a furnace were driving at its full speed and make, any increase in the quantity of the blast would, especially in the old Welsh antiquated furnaces, with large flat boshes, pass undecomposed above the cushion of carbon, and not upon the iron-making materials, which are awaiting the time when they will reach the melting region—viz.: the bottom of the boshes, and run through the unmixed fuel into the hearth. No furnace can work properly unless all the blast is thoroughly and completely decomposed before it reaches and mixes with the iron ore, and for this reason it is absolutely necessary to have such a body of fuel about the tuyères as will absorb the whole of the oxygen, and thus protect the ironstone. It is also essential that this should be done *in the hearth*, for the temperature in the boshes, for the extra size of that part of the furnace, would be too low to melt the iron. Instead, therefore, of adding more fuel, and reducing the make, it would be more desirable to reduce the quantity of blast, which could be done by lessening the size of the tuyère nozzles, till the proper quantity is ascertained for producing the maximum effect.

Dec. 24. S. W. S.

VENTILATION OF COLLIERIES.

Sir,—I have just met with the Number of your Journal containing a paper read at the Institution of Civil Engineers, by Mr. F. Forster (of the Sewage Commission), which requires a little notice. As I am conscious, from an actual and lengthened experience in coal mining (having been severely burnt once, and another time slightly), I must here declare that, contrary to this writer's knowledge and assertion, together with that of Mr. Evan Hopkins and of Mr. Struvé, the question at issue is, *not as to the best machinery* required in colliery ventilation, nor the application thereof, *but to some effectual mode* (if such can be found) of either preventing the formation of those more or less immense, but always extensively ramified cavities which exist in the upper strata of all past workings; or, on the one hand, to empty out as it collects therein gradually the carburet of hydrogen; or, on the other, to draw the gas thereout at such times as it will be safe and expedient, and thus prevent its *expression* (as out of a bellows) in a minute, by the closing in of these larger cavities into the actual workings through the loose debris of the goafs.

I have seen the aerosphere of an extensive colliery become suddenly unsafe by the infusion therein from such a cavity of about 1,500,000 cubic feet of carburet of hydrogen. This irruption of gas was attended by a concussion, which elevated the flames of all candles burning in the mine at the time, and besides was felt by the colliers themselves. No method of colliery ventilation will be complete until this sort of casualty is either prevented, or its periodical occurrence anticipated, by some less harmful occasion; and the time and money of colliery ventilators will always be expended in vain, which does not concentrate its objects upon this inevitable source of colliery disaster.

Government *surveillance* in other than practical miner's hands and heads will ever be *effête*, inasmuch as there is no royal road to effect this desideratum. The method of coal-working at Werneth Colliery, when in the occupation of Radley, Clegg, and Co., situated near Oldham, was, as is well known, of such a kind as to remedy, as far as practicable, this serious defect of ordinary coal-working, and which, in capacity of Government inspector, could be effected every where else by any "under-looker" ever employed at that colliery.

Reverting to the subject, and especially to the assertion of Mr. Forster about the danger of fiery collieries, it is doubtless the fact, that so long as the contents of old workings remain "stagnant," the new workings *are safe as usual*, and only endangered when, by the action of moisture, or a diminution in the pressure of the aerosphere, the goafy caverns, by falling-up, become deprived of their gaseous contents. W. Radley, Ch. E.

Paris, Dec. 15.

ATMOSPHERIC INFLUENCES.

Sir,—In my letter of the 25th Nov., published in the Journal of the 30th, I claim priority to the discovery which Professor Faraday now announces to the world, of oxygen being magnetic, and having, since writing that letter, had the advantage of a perusal, in the same Number of your Journal, of a detail of the professor's professed discovery, and the admissions therein contained embodying principles of the highest importance to science, confirming, as they do, the very groundwork on which I have ventured to declare the present doctrines in natural philosophy to be utterly at fault. I am induced to trouble you with a few further remarks upon the subject; and I think that when the full bearings of the question shall be understood, it will appear not a little unaccountable to your unprejudiced readers, that the learned professor, being the head of the chemical world in this country, should now bring under notice such a discovery, without, in the slightest degree, applying it to the laws which govern chemical action; having, as he states, made the discovery three years since, that oxygen is highly magnetic, and "that OF LATE he had, by means of a peculiar differential tension balance, ascertained that as the oxygen was dense or rare, it gained or lost for a given volume proportionably of its magnetic power, and also, by other experiments, that as the *temperature* was *lowered* or *raised*, it also *gained* or *lost* in its magnetic force."

It has not, as yet, been my good fortune to be in a position to consult "differential tension balances," the Government, doubtless, with a view to the promotion of the best interests of philosophy, having received and acted on my suggestions, without being able to discover from whence they originated; I have, therefore, been thrown entirely upon those resources which it is not in the power of man to confer, and instead of experimenting at random, in the hope of making a discovery on which to base a conclusion, I have reasoned to a principle, and then tested its correctness by experiment; but being unable to put to the test of experiment the conclusions I arrived at in 1847, I had no alternative but to give them to the world, in the hope that others more highly favoured than myself, would assist me in the matter; this Prof. Faraday has now done, but unfortunately, like the Government, will not see the source of the suggestion, and, therefore, claims the discovery as his own.

In my paper of 1847, already referred to, I observe "if we regard the centre of the earth as the extreme of heat, or the negative condition, and the uttermost bound of the atmosphere to be the extreme of cold, or the positive state, and which I have clearly shown to be the case, as governing the magnetic conditions of the poles of the earth, it cannot fail in throwing much light *on the electrical condition*, or specific gravity, of the gases.

The specific gravity of Hydrogen is	.....	0·0694
" Carbon (vapour of)	.....	0·4166
" Nitrogen	.....	0·9722
" Air	.....	1·0000
" Oxygen	.....	1·1111
" Chlorine	.....	2·5000

and the *affinity* they possess for each other, is generally commensurate with their difference of specific gravity."

On reference to the different chemical works of the day, it will be seen that hydrogen and nitrogen are electro-positives, oxygen and chlorine electro-negatives, and assuming heat to be identified with electricity, this arrangement would unquestionably be correct; but having shown that electricity is identified with cold, I ventured on transposing the order of things, and the professor has *of late* shown, that as its temperature was lowered or raised, oxygen gained or lost in the degree of its magnetic force.

A theory to be understood must be based on a leading or fundamental principle, and it will be allowed, I think, that there cannot be two or more ruling principles in Nature—all the various phenomena being nothing more than the effect produced by one pervading spirit, in its modified influences. What, then, is the principle on which we have now to base our conclusions; is it electricity or magnetism? I maintain that electricity is the cause, and that magnetism is nothing more than the effect which it produces on certain matter. Has Prof. Faraday shown that an atom of oxygen, or a body of that gas, has polarity? Certainly not, but merely that under different conditions it influences more or less a magnetic needle, in the same manner as an electric current, being made to revolve round a bar of iron, throws it into a highly-magnetic state; and it must be self-evident that electricity being identified with cold, the application of heat to oxygen gas cannot fail in reducing its electrical condition, and, consequently, its influence on the differential tension balance.

Prof. Faraday "was especially careful to impress on the minds of his hearers that it was not assumed that the hot or cold air acted at once upon the needle, but upon the great system of magnetic forces, which, *emanating from the earth*, pass, *as it were*, through the atmosphere into the regions of space, and, because of their polarity, return to the earth *again*. When these are affected in any one part, needles everywhere upon the surface of the planet are also affected in proportion to their distance from the seat of action, following in their position the force of the curve which governs them."

I must confess I am not sufficiently learned in magnetical science clearly to comprehend the meaning of the above conclusion, which is, *as it were*, expressed in rather doubtful language, and I cannot but think is not altogether devoid of what may be termed scientific jargon, and certainly, as expressed, will not stand scrutiny as a system, more especially on the principles admitted by the professor in the former part of his lecture. The earth is understood to be hot, but heat, instead of generating, takes away magnetic condition. Where, then, is the seat of this system of magnetic forces emanating from the earth, and passing, *as it were*, through the atmosphere into the regions of space?—and what are the conditions which induce this mighty ascent?—and if, because of their polarity, they return to the earth, why does not this polarity prevent their escape altogether? This system, it will be said, is the result of careful observation with delicate instruments; but the same instruments have hitherto declared oxygen to be an electro-negative, which Prof. Faraday now admits to be in a diametrically opposite electrical condition; and the testing of the theory at the observatories referred to can avail little or nothing when a fundamental principle is wanting.

No such objections as these can be advanced against the theory of electricity being the *cause* of magnetic condition. Mr. Crosse, 30 years since, clearly showed with his exploring wires that the upper regions are highly electric; and Mr. Weekes, 20 years ago, showed by means of electric kites that this condition decreases at relative decreased distances from the earth—the relative electrical condition of the crust of the earth, and the atmosphere in which we move, being defined by the evaporation of water from two vessels, one insulated, and the other not. Why electricity induces magnetic conditions in certain matter, has yet to be solved, and possibly never will be; but if that agent can impart to a bar of iron gigantic powers, there can be no difficulty in comprehending that the atmosphere, in different electrical states, should influence a body—such as a magnetic needle—in different degrees of intensity.

Professor Faraday's theory stops where it begins—being in no way applicable to the other phenomena in Nature, not even to gravitation. The electrical theory, on the contrary, cannot be investigated without its immediate association with *all* other phenomena in Nature, as I shall show on reference to the principles which must have prevailed during former ages. Would it not be better, then, I ask, for the scientific world at once either to acknowledge or attempt the refutation of these principles as a whole, than to bring them before the world, one by one, as recent discoveries of their own?

Franklin Coxworthy,
Canterbury-place, Lambeth-road, Dec. 21. Author of *Electrical Condition, &c.*

PATENT LAW REFORM.

Sir,—I am afraid Mr. Mushet does not quite understand the nature and bearing of my former suggestions as to patent reform, as he evidently supposes that I wish to sweep away all the present courts, judges, and counsellors, as far as patent matters are concerned, and to substitute an officer, or officers, being practical men, or men of science, instead of the present men of law. Such a proceeding, however, is far from my thoughts. I am as much alive as Mr. Mushet to the danger likely to arise from the prejudices of the former, which would be found, I take it, to be even more obstructive than the quibbles of the men of law. What I intended to advocate was the necessity of the courts of law being *assisted* by parties competent, from special knowledge and experience, to advise them in regard to the main points at issue; such parties not, as now, to aid the court in the position of *scientific witnesses*, who, being well paid by each party, are, in fact, *scientific advocates*, and do really confuse the court and jury from the opposition of opinion which occurs between two professors equally eminent; but such assistance shall be given to the court in the same manner as in maritime causes, the Elder Brethren of the Trinity House do at the present time give the assistance of their special knowledge to the Judge of the Admiralty Court—that is, as assessors of the court. Without an arrangement of this kind, I am quite sure (whether for patent matters, or any other kind of legal procedure, excepting, perhaps, the criminal), we shall never get competent courts. In point of fact, the truth of the principle of bringing competent knowledge to bear upon the decision of law cases, was acknowledged by our ancestors in the allowance of *special* juries, which were to be composed of merchants, who in former days were generally manufacturers also. By having the competent parties as assessors, not judges, paid out of the funds of the court, we shall have every chance of their considering the matter with minds not biased by the reception of the client's fee, but with a deep sense of the responsibility of setting forth a decision and opinion, which the public, and men of science in particular, will not fail to criticise. If no valid objection can be offered, and I cannot find any, I think some court of first-rate character should be specially nominated to decide the special points of patent cases, whenever they are pressed upon the courts. Thus, I would make the judicial committee of the Privy Council, who have had great experience in patent matters under Lord Brougham's Act, the Patent Court; and whenever the validity of the patent, by reason of want of novelty of invention, &c., or in case of difficulty in making the comparison between the patented invention and the alleged infringement, those points shall be reserved, unless the parties agree otherwise, for the judgment of that court, sitting with the scientific assessors before-mentioned.

As a competent court would thus be obtained to decide the great points of the case, the patentee ought to have the same facilities for the defence of his rights as the registered designer has—viz.: the option of proceeding in any court, even the County Court, or of a summary proceeding before the magistrates for a penalty. A point, which is one rather of the law than the practice of patents, is this—that wherever the patentee shall, in the judgment of the court, have made a *boná fide* specification, but has inadvertently included too much, or improperly expressed himself, the court may order the suit to be stayed, for him to enter his disclaimer or memorandum of alteration, whereupon his action shall lie, as if his specification had been correct, *ab initio*, he paying the defendant any extra expenses he may have been put to in consequence.

There is one point that I wish to impress upon the attention of Mr. D. Mushet and all patent reformers—viz.: that it is nothing but just that such of the public as may be interested in the subject ought to be allowed the liberty of opposing, upon just and well-defined grounds, the grant of a complete patent. I think it would be highly inexpedient to make grants of the extensive nature of letters patent for seven or fourteen years as a matter of course, like registering a design, as proposed by the Society of Arts. Again, I question the policy of giving complete patents for nothing, although I think provisional patents must be obtainable for little or nothing as to cost.—T. W.: *London, Dec.* 26.

Metal Tubing.—Messrs. Everett and Glydon, of the Kingston Metal Works, Birmingham, have patentented some improvements in the manufacture of metal tubes for boilers. The intense heat to which the tubes of locomotive and other boilers are subjected, especially at one end, causes them to become worn out at that end, and consequently useless before the whole of their length is unserviceable. Now the present patentees propose to introduce at one end a short length of tubing, the effect of which will be to obviate the inconvenience above alluded to. This inserted tube will answer instead of a ferrule, or may be employed with one in the manner customary.—*Claim*: The application in one end of boiler tubes of a shield or short tube, whose length exceeds twice its diameter, but it is less than half the length of the tube into which it is introduced.

The "City of Paris" Steam-Vessel.—The new steam-ship, *City of Paris*, lately built and fitted with engines by Messrs. Joyce and Co., of Greenwich, made her first trip from London to Boulogne under very unfavourable circumstances; owing to the fog being so bad, her engines were obliged to be kept at less than half speed until below Gravesend; she likewise had to contend with a strong head wind (almost amounting to a gale) and a heavy sea from the Nore to Boulogne, still she accomplished the passage in 9½ hours, leaving no doubt in the minds of competent judges that her average passage in favourable weather will be from 7½ to 8 hours, for her speed was found to be 17 miles per hour, when tested at the measured mile at Long Reach, and which, therefore, proves her to be a very fast vessel. The late stormy weather has tested her qualities, and proved her to be a first-rate sea-boat. On Friday morning, the the 20th inst., she went from Blackwall to Boulogne in 7 hours 35 min.—[We have great pleasure in announcing that these enterprising and skilful engineers have received an order to build a steam yacht for the Pacha of Egypt.]

The "Great Britain."—This steam-ship has at length been sold by the directors of the Great Western Steam-Ship Company, to Mr. Patterson, the eminent shipbuilder, of Bristol, for the sum of 18,000*l.*, being about the seventh part of her original cost. Mr. Patterson is now building in the dock in which the *Great Britain* was built, a steam-ship for the Royal West India Mail Packet Company, and she will be 6 feet longer than the *Great Britain*.

ON PATENT LAW REFORM.—No. IV.—HEATH'S PATENT.

BY DAVID MUSHET, ESQ.

It will be perceived, by the excellent report in your Journal of the 7th inst., that the extraordinary case, Heath *v.* Unwin, which I have been animadverting on as a flagrant instance of the protection afforded to dishonesty under the present Patent Law, has advanced another step. The *Times* of the day following the trial contained an unintelligible report, inverting and mistaking every feature of the case. This is not the first instance in which I have noticed their reports to be equally faulty, when I have happened to know the particular case; but the decision being rightly given is the point of most consequence. What precedes may serve as well as anything else the purpose of a day. Your reporter seems, however, to have fallen into one misconception. It is stated, as the defendant's plea, "that he placed blistered steel in a crucible, together with certain proportions of black oxide of manganese and carbon, which would become fused at a certain heat, and would combine and form the carburet of manganese before the blistered steel, which would require a much greater heat to fuse, could be operated upon by them." The members of the plea are here transposed—the defence being that the *steel* would enter into fusion before the elements of carburet had experienced a sufficient heat to effect the combination. This is a denial that the carburet of manganese is formed *at all* during the fusion of the steel; that it is, therefore, not present during the process; and that, *therefore*, the plaintiff's patent, claiming the use of carburet of manganese, *has not been infringed*. To support this view, it is asserted that, if an equal quantity of the elements of the carburet (say, 30 lbs.) be exposed in the same furnace with 30 lbs. of blistered steel in separate vessels, the steel will be fused and ready to pour before the other mixture is converted into carburet. This support of the plea shows great ignorance, either real or pretended, of metallurgical operations. Nothing is better known to practical men of science than the long heat required to act upon and penetrate considerable masses of carbonaceous matter. It *does* require a longer heat to produce 30 lbs. of carburet of manganese than to melt 30 lbs. of steel; *but*, on the other hand, the heat required to melt 30 lbs. of steel is *much more* than sufficient to effect the combination of half a dozen ounces of the elements of carburet into that substance. It was upon a disbelief of this very common-place and well-known law that Lord Abinger required the witness to get into the pot and see what was going on, and non-suited the plaintiff. The judges of the Exchequer also pronounced this undoubted fact "mere matter of speculative opinion," and used it as one argument to annul the verdict in the second trial. To guard himself in future against the effects of such extraordinary ignorance, Mr. Heath suggested a simple means of *putting a witness into the pot*. A small crucible, inclosing the small dose of oxide of manganese and carbon, was deposited in the melting pot with 30 lbs. of blistered steel. When the steel was ready to pour, the small crucible was withdrawn, and found to contain, as every one but the most ignorant knew *must* be the case, a button of carburet of manganese. The judges can, therefore, no longer assert this fact is mere speculative opinion. Such trifling experiments are necessary to learners, where the first rudiments are not only unknown, but discredited. They convey the same lively satisfaction and surprise which a novice in arithmetic experiences when he has proved his first sum in division, by multiplying the quotient into the divisor. It appears in the late trial directed by the Chancellor, on the ground of the "dangerous consequences" involved in the decision of the Exchequer, that the presiding judge felt himself so far bound by that decision, as to make it necessary to enter a verdict for the defendant, with the proper reservations for arguing again the point of law in the superior court. It cannot be said but that this is a commendable, and, no doubt, regular course. The very essence of justice is certainty. Nothing more strikes at its root than varying opinions. Whatever has once been decided ought not lightly to be overturned; and it could be wished this principle had weighed more upon the minds of the Exchequer Court when it overthrew a verdict based upon fact, to substitute it by a decision based on abstract subtleties of opinion. Certainly, a single judge sitting in a trial *ought* to feel himself fettered by the judgment of a full court, which, in the face of the weighty interests, moral and legal, depending on the issue, could interfere with an Englishman's best safeguard—the verdict of a jury—and destroy it; but the propriety of Justice Cresswell's view on this occasion only involves the whole question in ten-fold more importance. There appears to have been none of that Gothic prejudice against science and scientific men which distinguished the bench on the previous trials; so that the whole matter is resolved into the soundness of the adverse judgment, which is *now beginning to establish a precedent*. A question of more moment to the whole patent interest of Great Britain cannot exist. It is the common cause of *all inventors*, whether humble or wealthy; for if it be once established as a rule, that after the fact of an infringement has been proved and decided, the patentee has yet to be subjected to a metaphysical ordeal, in which the judges are to determine by themselves whether the pirate *intended* to commit the act which it has been proved he *did commit*, patent property is *annihilated!* The uncertain protection which it has hitherto possessed is completely destroyed; or, at the best, it is wrapped up in elements so totally removed from the ordinary understandings of practical men, that they will be able to form no more certain judgment of their chances of success, than of what way the wind may blow this day six months. For what is more variable than the mere human *mind?* Nothing, except it be the opinion which that mind is likely to form on the abstract motives of others. Yet it is to this variable opinion, formed by the most variable of instruments, that we are to look as the standard of the rights of patent property, so long as the judgment of the Exchequer *remains as a precedent*. And what is to hinder such a rule, if it once gets a footing, from being applied to every species of property, entirely confounding the distinction betwixt civil and criminal law? So that whatever a man has, his tenure of possession will solely depend on the *opinion* which a court of appeal may arrive at, as to the *intention* of the person who attempts to take it from him. As it is impossible to suppose that a court of such high legal character as the Exchequer did not believe that their decision was right, or that they were insensible to the unparalleled consequences which it involved, and which must have pressed upon the understanding with the greatest momentum to control it in the onward path of justice, I purpose still further to investigate the turning point of their judgment, and to endeavour to dissect out what are the considerations or impressions, which *must* have sufficed to carry conviction to *their own minds*. It is very difficult to do it. Nothing is harder when a palpable wrong is staring before you, than to repress indignation, and coolly analyse the roots of the error. There is almost a sense of moral delinquency in stooping to the attempt—that it is a descent from the high ground of right and wrong to go down upon a level with sophistry, in order to disentangle its mazes. If, on an alarm of fire, you find the owner of the premises loitering about at some trifle, when a few pails of water, properly applied, would extinguish the blaze, you scarcely stay to inquire whether it be folly or the resolution of some abstract theory respecting combustion, which occupies him. Indignation inquires if he is seeking to burn his house down; and you take every means to drive him to act and aid in preserving property. Nevertheless, he may, in fact, be the honestest man in the parish, although his folly excites such reproof. A general, who finds a captain, at the crisis of battle, lingering behind his corps instead of leading them to the point, will not stay to investigate the courage of his motives. He may be studying a profound scheme of strategy fitted to win not that but a hundred future battles; but the only question which can spring to the lips of his chief, or of any other spectator, is, are you afraid of the enemy? He is, perhaps, the bravest man in the contest, and he is awakened from his dream.

Erratum.—In the last paper on Patent Law Reform, Dec. 14th, 24th line, for "before forming the steel," read "before pouring the steel."

[*To be continued in next week's Mining Journal.*]

Locomotive for Anthracite.—The Philadelphia and Reading Railroad Company have made a second experiment with a new locomotive, invented by Mr. Dimfel, for the consumption of anthracite coal, and the result appears to be quite satisfactory. It is believed that this great desideratum has been accomplished at last. The fire-boxes are not injured to any greater extent than by the use of wood, and, consequently, a great saving in the cost of fuel is effected. The following is a description of the boiler:—"Dimfel's boiler has no inserted tubes in the water cylinder, but the outline of the boiler in a sort of figure of 7 shape, with free water-pipes connecting the back and top parts, and penetrating the main boiler-box, so as that the ends are up in the water instead of in the fire. In this way the fire plays around and amongst these tubes or water-pipes, giving unusual circulation to the boiling water, and exposing no lapped parts to be unfurled and burned off by the intense heat. The boiler is equally applicable to marine engines."—*Miners' Journal.*

RAILWAYS, STEAM-ENGINES, AND MACHINERY.

Mr. James Samuel, C.E., has recently obtained a patent for improvements in the construction of railways and steam-engines, and in steam machinery. These improvements relate, in the first place, to a variety of bearing plates, chairs, and chair sleepers, of improved forms and arrangements for fixing the rails, in order to facilitate and improve the construction of the permanent ways of railways. The first consists of what the patentee terms a "longitudinal trough sleeper," which consists of a trough having broad flanges, resting on the ballast, the flanges being strengthened by webs or ribs passing transversely under the trough; these trough sleepers may be placed continuously, or at intervals. The troughs are fitted with wood bearings, which may be continued in the same piece through two or more sleepers, or fitted to single sleepers; these bearings are in two pieces, which, when together, receive the web and lower part of the rail between them, being suitably formed for that purpose. In this position the rail and wood linings are lowered in the sleeper, which, by reason of the inclined sides of the trough, become tightly wedged therein, the wood having sufficient substance to prevent its descent to the bottom of the trough. The flanges of these sleepers may either be in the plane of the lower part of the rail or inclined thereto. The guage of the rail is maintained by tie-bars, stretched between the lower part of the webs or ribs, where they pass under the trough; and as a further security another stay may connect the flanges of opposite sleepers. Instead of inclining the sides of the trough, they may be perpendicular, and the wood linings wedged up, to secure them in their places. As a further security, for either inclined or perpendicular sides of the trough, the sleepers may be serrated, thereby giving better hold to the wood. In order to strengthen the flanges, the patentee sometimes corrugates them transversely to the direction of the rail, which also admits of their being cast very light, with a view to the reduction of the weight—the rib may also be cast open. Trough sleepers, of a somewhat similar construction, are also represented of wrought-iron. The iron is bent or rolled in the form of the trough, with the flanges more or less inclined, so that the edges pass below the bottom of the trough; and, in order to give them sufficient strength, numerous cross tie-bars are stretched between the opposite flanges, passing below the bottom of the trough. Continuations of some of these tie-bars connect the opposite sleepers together, as before described, with reference to the tie-bars from the webs, to maintain the gauge of the line. The flanges of these wrought-iron sleepers may be either plain or corrugated, transversely or in a longitudinal direction, whereby great rigidity will be imparted to the sleeper.

Another improvement in longitudinal sleepers or bearing plates, consists in corrugating them in the direction of their length—such sleepers having either a flat surface, or other provision on the top, for attaching the rail; or the rail may be of the same piece, but the patentee prefers attaching the rail by bolts or otherwise, as the wearing out of the rail does not necessarily involve the destruction of the sleeper, as is the case with the solid rail and sleeper, which is therefore objectionable, on the score of economy.

The next improvement consists of what the patentee terms a fish-chair, which consists of a base similar to the ordinary chairs, but, instead of a recess, in which to receive the rail, two brackets rise on one side of the rail only, to which is cast a fish or plate resembling the fish piece, sometimes adopted for connections at joints of the rails. The brackets supporting this piece are at a sufficient distance to admit of one bolt being introduced through the fish piece. For the joint chairs of this description the chair is made much broader, so as to admit of two or more bolts passing through the two butting ends of the rails. In some instances these chairs have the fish piece connecting two chairs, which are set on two separate transverse sleepers; in addition to the security thus afforded at the joints, a fish may be placed on the inside of the rails, through which to pass the bolts, as well understood. The rails thus are without other support than that afforded by resting on the base of the chair, the fish rising on the outside thereof. These chairs are represented both of cast and wrought-iron, and fitted to sleepers of iron or wood. In the case of iron transverse sleepers, the patentee corrugates them in the direction of their length. In the construction of longitudinal sleepers or chairs, having a fish side, they are formed somewhat similar to the trough sleeper, first described. The sleeper consists of a broad flange resting on the ballast, with brackets rising on the outside, and a fish plate cast thereto, the whole being strengthened by transverse webs below—these rails are connected by tye bars, as above described. In some instances, the patentee places the flange on the outside, as high as the top of the fish, and the inside one below the lower edge of the rail. These sleepers may either be placed continuous, or at intervals.

A modification of the fish rail is also represented of wrought-iron, which consists of a longitudinal bearing plate, formed in two pieces, constituing flanges to the rail, which are inclined thereto when secured in position. A rib is formed on one edge of these flanges, which fits the sides of the rails in the manner of a fish, and are bolted through the rail in the ordinary manner. The flanges, which are corrugated, are connected below by numerous cross-tyes, which maintain the flanges in their proper position, preventing the pressure to which they are subjected flattening the flanges. The rails have thus no other support than that afforded by the fish plates on either side—the rail resting on its upper lips along the upper edges of the fish ribs; some of the cross-tye bars are extended, and connect the two lines of rails.

Another improvement in permanent ways consists in uniting or joining the rails. In forming these joints, the patentee cranks one end of the rail, so as to lap a sufficient distance on the outside of the rail to which it is attached, at the same time taking care that the inner line of the rail is such as not to interfere with the running of the wheels. In some cases the patentee removes the meeting lips of the lapping part of the rails, so that the joint will be less clumsy when bolted together, which is effected by through-bolts, with or without fishes on the sides.

The second part of this invention refers to improvements in steam-engines, such as have two or more cylinders, and working with their cranks at right angles to each other. In these engines, the patentee prefers that one cylinder should be larger than the other. The object desired by the arrangement to be described, is the working of the steam expansively to a greater extent than heretofore. In order to accomplish this, the patentee admits the steam into the smaller cylinder during the first half of the stroke, at which point it is cut off, and simultaneously with the cutting off, a communication opens between the steam side of that cylinder and the larger cylinder, the piston of which being a quarter of a turn in advance of the other, is at the dead point; the steam so admitted expands, and performs the remaining portion of the stroke in the first cylinder, and completing also the whole stroke of the second or larger cylinder. When the first piston has completed its stroke, the communication is cut off between the two cylinders, and the steam contained in the first cylinder is then opened to the air or condenser. The steam, entering the second cylinder during the first half of its stroke expands, and completes the stroke, when it is also opened to the atmosphere or condenser. To effect the working of this arrangement, the first cylinder is fitted with a slide valve, through which the eduction steam passes. This valve face has a single opening in the centre, with sufficient lap to admit and cut off the steam at the proper periods of the stroke, and also to allow the eduction passage to remain over the port a sufficient length of time; the back face of this valve has also an opening, about the ordinary depth of a port, which, as it travels, passes over three ports in the back of the valve case. The centre port is in communication with the other cylinder, and the upper and under ports with the eduction pipe. When the steam is cut off from the first cylinder, its slide establishes the communication between the cylinders, by opening the centre port, at the back, which remains open during the succeeding half stroke; on completing this, the valve of the first cylinder moves with its back port opposite either the upper or under of the back ports leading to the eduction pipe. These back ports are covered by the valve at all other times of the stroke, and it will be understood that the upper of these three is for the escape of the waste steam from the upper side of the first cylinder, and the under one for the escape from the under side, while the slide port, as it alternately passes over the centre port, regulates the admission of the steam to the second cylinder. The steam valve in this cylinder may consist of the ordinary slide valve, although the patentee has shown this valve in combination with, and on the interior of the through valve mentioned. The waste steam from the interior of this is conducted to the eduction pipe of the other cylinder. The valve used in the first cylinder also forms the subject of an improvement. It is of a cylindrical form, the ends of which slide between the cylinder face and the back of the valve case, and have the requisite ports cut therein, either as before described, or for the ordinary working of steam-engines. The back end of this valve is fitted with a metallic packing ring, similar to that used for pistons, but on the interior of the cylinder. This is again pressed towards the back plate of the valve case by spiral springs, by means of which the whole is rendered steam-tight. The last part consists of an improved "donkey" engine, used for feeding steam-boilers. The improvement consists in forming the cylinder and pump barrel in one piece—the barrel being a continuation of the bore of the cylinder, but of smaller diameter. The plunger of the pump is extended from the underside of the piston, the pump barrel and cylinder being divided by a metallic packing, surrounding the plunger. The other arrangements of the engine are of the ordinary kind, but it will be observed that the steam admitted to the upper side of the piston acts on the entire area thereof, and has the requisite power to force the water into the boiler, while the steam entering below, only acts on the annular surface provided by the difference of diameter of the pump and cylinder, but which is sufficient for drawing the water. The patentee claims:—1. The construction of logitudinal trough sleepers. Also the construction of metallic bearing plates or chair sleepers described.—2. The construction of fish-chairs described.—3. The modes of securing and construction of the ends of rails by scarf-joints.—4. The corrugation of rail-bearing plates, either tranverse or logitudinal.—5. The construction of hollow slide valves, with metal packings and springs, in the manner specified, in order to admit of the waste steam passing through the back of the valve.—6. The mode or modes of constructing such steam-engines as have two or more cylinders, working with their cranks at right angles to each other, or at about such angles, so that steam used for giving motion to the piston of one cylinder may be transferred to another, and used in giving motion to its piston, whereby a great degree of expansion is obtained.—7. The construction of small steam-engines or "donkey," used for pumping water into the boilers of large engines, such engines having pump barrels, pistons, and plungers, such as described.

THE GARTSHERRIE IRON-WORKS.

In 1830, when the Messrs. Baird first commenced these works, there was only one furnace in operation. By the system of blowing then in general use, it required from 4 to 8 tons of coal to produce a single ton of iron. The produce of this furnace at that time did not exceed more than 70 tons per week, or 3640 tons per annum; but it will be seen how progressively these works have gone on increasing and improving, in order to keep pace with the spirit of the times. About the year 1834 a valuable improvement in the hot-blast, adopted some years previously by Mr. Neilson, of Glasgow, was discovered by Mr. James Baird, who, by the construction of a horse-shoe pipe, and some other machinery in the application of the blast, effected a great saving of fuel. During last year a still further improvement in this respect was made by Messrs. Baird and Whitelaw, by means of a very ingenious invention, which is likely to become, if not already, of general application. This consists of an improved heater on the top of the furnace, forming part of the tunnel head, and which is heated by the hitherto waste flame escaping therefrom. This saves the fuel and all other expenses previously incurred in heating the air; and, by the adoption of the invention, the workmen are no longer exposed to the intense and burning heat which was by far the most disagreeable, if not dangerous, part of their duty. It may be easily imagined, then, how valuable this discovery is in every point of view to the production of iron. The amount of coal now required for making a ton of iron, since a sufficiently high heat has been attained, is 2½ tons, instead of from 4 to 8 tons as formerly. The quantity of air required for the production of a ton of iron is 185,000 cubic feet, which is supplied by three immense blowing engines. The pressure of the blast is 2¾ lbs. per square inch, and is equalised by means of a large receiver, which resembles in shape and size the great Nassau Balloon, and forms a very picturesque object in the works. Of the 16 furnaces in operation in Gartsherrie, there are 11 in which the air is heated by coal and dross, and 3 in which the heaters are placed in the tunnel head from which the hot-blast is supplied. The other two are heated by collecting the gas which is generated in the furnace and before it escapes; and by carrying it down and burning it in the old heaters a great saving of fuel is also effected.

We come now to the history of the works of Gartsherrie, showing in cycles of five years each the increase in the number of furnaces, with the quantity of iron produced annually, when the whole of the furnaces are constantly at work:

Years.	Furnaces.	Weekly Produce.	Annual Produce.
1830	1	70 *tons*	3,640 *tons*
1835	5	95 „	24,700 „
1840	12	100 „	62,400 „
1845	16	130 „	108,160 „
1850*	—	125 „	112,320 „

The quantity of materials being raised just now amount to per month:—

Coal	*Tons* 33,000
Ironstone	28,000
Limestone	3,000

Which shows an annual amount of 768,000 tons. It should here be stated, however, that the ironstone, before being taken to the blast-furnaces, is first submitted to a burning process, by which it is calcined, so as to increase the proportion of ore from 30 to 63 per cent. This process is performed in the neighbourhood of the works, where the ore is accumulated in immense heaps, and, having been ignited, is allowed to smoulder until it is required, and is then removed to the furnaces.

The number of miners and labourers employed in the production of this vast amount of mineral wealth at the Gartsherrie Works alone forms collectively a very considerable community in itself—amounting, indeed, to something like 12,000 individuals, including families. The number of hands actually employed, and in receipt of wages, amounts to about 3500, and the wages paid average generally about 10,000*l.* per month. Comfortable residences are provided. Many of the houses, at least one-half, have two bed-rooms, and thus, according to the size of the families, the decencies of social existence are provided for in one of the most important regards.

Adjoining the works are the stables, built to accommodate 60 horses. One would naturally imagine that, in the very birthplace of machinery like Gartsherrie, so large an amount of horses would hardly be required; yet so it is, and thus are the obstructors of modern improvements answered, who were wont to prophesy that the progress of steam would destroy our cavalry forces, by putting a stop to the breed of horses.

Whilst describing the physical comforts of the working classes in the employment of the Messrs. Baird at Gartsherrie, we should not omit to mention the munificent provision made by those gentlemen for the spiritual and moral culture of their workmen and families. In the years 1838-9, a beautiful church, on a hill near the works, was built at a cost of 3500*l.*, to which may be added 1400*l.* for the churchyard, the greater part of which was defrayed by the Messrs Baird. In 1843 an excellent school was erected, on an adjoining space, which cost upwards of 2500*l.* Messrs. Baird's poor-rates amount to 836*l.* 10s. 9d. annually, which, with road money, rural police, and prison assessments, amounting to upwards of 600*l.* more, makes their participation of the public burdens very considerable. The amount of railway and canal dues paid by them exceeds 14,000*l.* per annum—a sum which appears moderate, considering the immense extent of their traffic; but then it should be remembered that a great deal of it is conducted on their own private railway. The store at Gartsherrie for supplying the men is furnished with every conceivable commodity necessary to existence. And here we may be allowed to congratulate both Messrs. Baird and their workmen on the principle adopted in this respect; for we were happy to find that it was perfectly free from the abuses of the truck system. Every article is of the very best quality, and their sale is regulated by the public markets, and it is perfectly competent for the workman, when he receives his month's pay, to buy where he chooses. If, however, he requires money in advance, he is expected to deal at the store. A competent person has calculated that the advantages derived by the workmen from dealing at the store are commensurate with a bonus of a thousand a year.

If any proof were wanting of the superior order of culture afforded by the management and training at Messrs. Baird's establishment, it would be found in the fact that a great number of their men have been from time to time employed as engineers and managers on various railways in different parts of the country, and none have been more distinguished for steadiness and for sobriety, or for general ability in the discharge of their duty.—*Glasgow Constitutional.*

Improved Pneumatic Engine.—Mr. J. H. Vries has just patented some improvements in working engines by atmospheric air. The engine which forms the subject of this patent embodies certain new principles said to have been discovered by its inventor, and is stated to be applicable to all motive purposes for which steam is at present employed. Various modifications of it are shown as adapted to stationary, marine, rotary, railway, and common road locomotive engines; but the patentee, nevertheless, lays no claim to any particular mechanical arrangement for carrying his invention into effect. The principle on which such engines are constructed is the giving motion to a fly-wheel and shaft or other ponderous bodies, and causing them to revolve by means of the impulse to be derived from the momentary action and impetus obtained from the escape of small quantities of highly compressed air in rapid succession, and from this first motion to form a connection by means of wheels, levers, or any of the other methods in common use, so as to work a force pump or pumps, for the purpose of gradually compressing air into the receiver from which the escape has been allowed. The escape valve and force pumps must be so proportioned and constructed that more air may be compressed into the receiver than is consumed by the escape of the air therefrom. Then, in proportion to the height of condensation or density of the air used in giving these impulses, so much the more super (surplus?) power will be generated, which may be taken from off the first mover by any of the ordinary methods, and applied to any of the mechanical purposes to which the steam-engine or any other prime mover is applicable. After giving us this insight into the principles of his improvements, the patentee proceeds in a most laudatory style to enumerate the advantages possessed by this construction of engines over those at present in use, both as regards simplicity, economy in the first cost, compactness, and so on *ad infinitum*—advantages which, for the patentee's sake as well as that of mankind at large, it is to be hoped are not purely hypothetical.

The Storm Indicator—Approach of Storms and the Electric Telegraph.—In the Journal of Nov. 30, we gave a paragraph from a provincial paper relative to an instrument for prognosticating tempests, invented by Dr. Merryweather—the accuracy of which had been tested by the experience of 12 months. The apparatus for effecting this purpose will be one of the curiosities of the Exhibition. We now find that the telegraph also, if it does not foretell, gives notice of storms. It is calculated that a hurricane storm traverses the atmosphere at the rate of a carrier pigeon—viz.: 60 miles per hour. This new application of the telegraph has already become of practical importance; and we observe it stated that the mariners at Cleveland and Buffalo, and on Lake Ontario, are informed by the telegraph of the approach of the north-west storm. A vessel, moreover, at New York, about to sail for New Orleans, may be apprised 20 hours in advance that a south-west storm is advancing on the coast from the Gulf of Mexico. We trust no time will be lost in giving the shipping of Great Britain the advantage of this admirable use of the powers of the telegraph, since, if timely informed of approaching storms, they would in many cases be prevented leaving port until the danger is past, or be enabled to take shelter at the nearest harbours.

* The produce of the last cycle ending this year shows an increase of 5 tons per furnace weekly.

COMPANIES PROCEEDING UNDER THE WINDING-UP ACT.

Boston, Newark and Sheffield.—The affairs of this company have just been referred to Master Richards, to ascertain by a preliminary inquiry whether it is expedient that the undertaking should be wound up under the Act. From the state of facts just brought in by the petitioners, it appears that although the directors deposited two distinct sets of plans and sections, they were both grossly incorrect, and were so declared by the House of Commons. A large portion of the line was never surveyed, and no books of reference lodged, and petitioners allege that the attempt of the directors to go on in Parliament was a reckless and unjustifiable expenditure of the funds of the shareholders, and that for these and other reasons they ought to be called on to account for the 168,000*l.* they received in the shape of deposits. The petitioners, on the ground of gross negligence, protest against the engineering and surveying charges of 23,151*l.*, and the legal and parliamentary of 31,296*l.* The directors in their account with the shareholders charge themselves with a return of 1*l.* per share out of the deposit of 2*l.* 12s. 6d. on 64,000 shares, whereas it appeared by the affidavit of Mr. Salmond, the chairman of the company, made in this matter on the 2d February last, that the 1*l.* was paid on 56,271 shares only, the remaining shares, as he alleges, having been either lost or transferred, so that the directors, it is alleged, must still have in their hands 7729*l.* in respect of this item alone. The petitioners allege that the directors are chargeable with a sum also of 3528*l.* in respect of the proceeds of some Midland stock, exchanged for 150 shares in the Mansfield and Pinxton Railway, for which they debit themselves with 13,528*l.* instead of 10,000*l.* The petitioners also charge them to account for other sums respectively of 3864*l.* and 3528*l.* on transactions with the company's funds in respect of 50,000*l.* Midland stock, and consequent on negotiations with the Boston and Newark Company to abandon part of their scheme. The petitioners protest against the legality of this application of the company's funds, and contend that the directors received a far larger premium on these transactions than they showed to the shareholders. Returns of the remainder of the deposit were made in the shape of a division of 1*l.* of Midland stock for every two Boston and Newark shares, and subsequently a final return of 1s. 6d. per share, but which the petitioners declined to receive.

Direct West End and Croydon Railway.—A meeting was held before Master Tinney, for the declaration of a call of 75*l.* per share on the provisional committee. The financial statement set forth that the debts and claims likely to be admitted amounted to 1520*l.*, and those disputed or likely to be rejected to 3850*l.* There were 37 names fixed on the list of contributories, 21 having paid, but 16 having paid no money, and the object of the call of 75*l.* each was to equalise the payments previously made with the call now sought to be made, from which a sum of 600*l.* was likely to be produced. The official manager also claims from persons signing a guarantee against certain debts, but who afterwards received the money in defiance of such guarantee, and which appears to have been paid them in accordance therewith, a return of the sum so improperly received. The official manager does not say whether a further small call will be required, but should such be the case, he thinks it cannot exceed 20*l.* On his Honour making an order for the call payable in January, the representatives of Sir George Rich, one of the members of the provisional committee, claimed exemption from the call on the ground that Sir G. Rich had become bankrupt in Oct., 1849. The certificate of bankruptcy having been produced, the name was struck off the list, and that of the bankrupt's assignees substituted thereon. Messrs. Marten and Co., solicitors for Sir John Key, one of the provisional committee, here applied to have the decision reviewed, placing that gentleman on the list as liable to pay the call, on the ground that Sir J. Key was "not worth a farthing, and that while all the proceedings were going on, of which he knew nothing, the hon. baronet was at Brussels." A contributory saw him at Brighton a short time ago. Another contributory: "He was the first chairman of the company, and never paid a shilling, while all the others did. (Laughter.) He got me into several companies." His Honour: "Let Sir John Key take an appointment to review, and show cause why he should be struck off the list."

Direct Birmingham, Oxford, and Reading.—Master Brougham having fixed the payment of the call of 2*l.* 12s. 6d. per share payable on the 15th Jan., proceeded to review the cases of the following provisional committeemen:—Messrs. J. B. Bankhead, W. H. Cooper, W. Hunter, J. Onions, S. E. Sichell, and J. Thorn. The cases were those of parties who had accepted shares by letter, as in the case of Upfill, and Mr. Roxburghe, the counsel for Mr. Hutton, the official manager, argued that they were governed by the same principle. The terms of the letter of acceptance being vague, his Honour in Mr. Bankhead's case struck his name off the list. The other parties were re-settled on the list, it being intimated that there was nothing to distinguish their cases from that of Upfill. Notice of appeal was given against the finding of the Master, and it was arranged that pending the appeal, the call as regards them should be suspended.

Direct Lincoln, East Retford, and Sheffield.—Mr. Soulby, the official manager appointed to inquire into the management and present position of this company's affairs, has just made his report to the Master, from which it appears that he cannot get the books and papers of the company necessary to enable him to wind it up from Messrs. Miller and Carr, the solicitors, who claim on them a lien of 2000*l.* Mr Shuttleworth, one of the directors, has given up all the books, but Mr. Bevan, the promoter, says he has none, and that all the letters of allotment were destroyed. It appears that no list of the provisional directors was registered at the office, notwithstanding the requirements of the Act, and this is accounted for by the office business at the time being so great as to cause it to be overlooked. The parties who acted in the real management of the affairs were Lord E. Chichester, Mr. J. B. Shuttleworth, J. Grahame, Captain Ogle, R. Twiss, and J. Rippon as committee of management. Numerous applications were made for shares and letters of allotment sent out, but the deposits of 2*l.* 12s. 6d. were only paid on 1015 shares, or 2664*l.* At this period, it appears that 2000 shares were purchased at a premium by the committee of management in the market, being considerably more than the number issued to the public, and which, of course, the sellers would be unable to deliver. To satisfy the committee of the Stock Exchange, who required that all companies should show that the deposits on a large portion of the shares were paid, before they would fix a settling-day, the ingenious expedient was resorted to, of drawing from time to time out of Masterman's and paying into Barnett's, and paying into Masterman's and drawing out of Barnett's sums purporting to be deposits on letters of allotment, for which the bankers signed the receipts, but which letters and deposits were nominal. These shares were not dated, but bore the signatures of Captain Ogle and R. Twiss; and in December, 1846, the secretary added his signature, dating them April, 1846, and burning the scrip from which they were extracted. From the affidavit of C. Smith, April 1850, it appears that he was employed by the solicitors, unknown to the directors, to obtain applicants for shares; that the persons were brought to the company's office, where a nominal allotment of the shares took place, the parties signing the deed being paid 10s. and 20s. each, and Smith receiving 1s. 6d. per share. Loans were obtained by the parties connected with the company on the shares, and the secretary and clerks from time to time "raised the wind," from scrip in the company's tin box.

National Disinfected and Dry Manure Company.—Master Farrer has disallowed the claim of Dr. Barry for 3000*l.*, due to him as one of the promoters, and 491*l.* as managing director, enlarging the time for payment of the call, on the understanding that an action at common law would be commenced for the claim.

Independent Assurance Company.—This company was established in 1848, for extending the benefits of life assurance among the poorer classes. Business was commenced with a raised capital of 614*l.* only, and a borrowed capital of 1000*l.* from the bankers, and both were exhausted in carrying on the business, which the petitioners allege was carried on in an extravagant manner. Policies to the amount of 3000*l.* have become payable, and others to a large amount are expected to fall due, without funds to meet them. In proceeding with the settlement of the list of contributories, the first name taken was that of R. H. Holt, who had signed the deed, but had not paid on his shares. It was urged on his behalf that when he executed the deed no shares were placed against his name, but that they were subsequently inserted by some other party, and the official manager was called on to produce the attesting witness to the deed. Mr. Roxburghe, for the official manager, opposed this, contending that the Act made the books of the company *primâ facie* evidence, and that the *onus* was with the other side of proving the case. Adjourned for further evidence.

Cheltenham Hotel Company.—Master Brougham has fixed the 16th of January for the appointment of an official manager to this company established in 1837, and under which an hotel in Cheltenham, which was unsuccessful, was erected at a cost of 40,000*l.*, by more than 20 persons, and upon which there are mortgages now existing to the amount of 18,000*l.*

A Contributory Fixed in his Absence.—A contributory having been placed on the list during his absence abroad, Master Brougham said he could not rehear his case, as the gentlemen had been fixed on the list with others on what was considered sufficient evidence in his absence.

New Railway and Joint-Stock Companies under the Winding-up Act.—The following new references, in connexion with companies to be wound up, have been referred to the following masters:—Peterborough, Wisbech, Lynn, and Boston Railway, to Master Senior; Southern Counties Union Railway, to Master Kindersley; Grand Junction and Midland Union Railway, to Master Brougham; Dudley, Wolverhampton, and Walsall Railway, to the same; Patent Concentrated Tea Company, to Master Farrer; Hull Glass Company, to the same; Union Grocery Company, to Master Kindersley.

Winding-up Joint-Stock Companies.—It has been decided by Master Farrer that the Courts of the Masters in Chancery are not tribunals to try, but only to admit the claims of creditors against the particular estates, and that the moment a dispute arises, a creditor has his usual remedy at common law. Master Brougham has decided that although he is empowered under the Act

to review the list of contributories, and to re-hear cases upon the same evidence he has not power to re-hear a case on new evidence, unless directed by the Court.

SPANISH MINING.—No. I.—HISTORICAL NOTICE.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—As you appear to think that some authentic notice of the mines and state of mining in the Spanish Peninsula would be acceptable in the columns of the *Mining Journal*, I propose to send you, from time to time, such information as, during a long residence, I have acquired on the subject. Of Spanish mining little is generally known beyond the fact that the country is rich in minerals; a few preliminary remarks, therefore, illustrative of the peculiar position of mining in this country, will hardly be misplaced. Not only has it but little resemblance with that of England, France, or Germany, but it is in fact, almost totally dissimilar from what we see in other countries of Europe. Mining has there been pursued for many centuries without interruption, and has gradually attained its present growth and perfection in proportion to the demands of increasing civilization for the metals and other mineral substances. Its gradual development has been aided by the advance of the mechanical arts, of various kindred sciences, and more particularly by the invention of the steam-engine, and the gradual improvements in the application and economy of steam-power. In Spain, on the contrary, although mining dates from the earliest epochs of history, it has afterwards for many centuries fallen into complete disuse and neglect; its resuscitation is a thing almost of yesterday, and its present state and development are, consequently, very imperfect. It is striking to observe, as I have myself done in commencing new operations on lodes, the long buried subterranean works, and even the *tools* and *lamps* of the Moors and Romans, while of the period which has since intervened, no traces are to be seen. In fact, in many cases we are now taking up the mines just as the Moors and Romans left them, a period of 500 to 1500 years having intervened, during which the sound of the pick has never resounded in the excavations, and the mineral has reposed undisturbed in its native bed. The first introduction of any art in a country where it was previously unknown involves, of course, many difficulties, but more particularly one like mining, which requires so much collateral aid from chemistry, metallurgy, mechanics, and other departments of knowledge. From these difficulties we are now just beginning to emerge, yet with these and many other drawbacks the revival of mining in Spain has been attended by the discovery of mineral deposits of extraordinary value, and by example of success in mining, which, compared with the general smallness of the outlay, can hardly be paralleled in any other part of Europe.

The origin of Spanish mining dates back to the same remote period of antiquity as that of our own country; and it is not improbable that the same Phœnician fleets which traded for tin to the coast of Cornwall may have transported the silver raised from the mines of the Mediterranean provinces of Spain to the great marts of traffic of the ancient world. The records of ancient history as regards Spanish mining are not only numerous and precise, but they are remarkably borne out by the vestiges existing at the present time; in fact, mineral discoveries made within the last few years, demonstrate the correctness of a production of silver which was before considered as almost fabulous. The ancient mines of Spain were chiefly situated on the coast of the Mediterranean, and, probably, the chief centre of mining at that period was the coast of the present provinces of Murcia and Almeria. Extensive vestiges of mines and enormous piles of slag are still seen in various localities, and more particularly in the vicinity of the Phœnician colony of Cartagena (its name and site still unchanged), and of the Roman town of Urci (now Villaricos), of which large piles of slag and a few antiquities found in excavating the foundations of modern buildings, alone remain to attest the existence. It is deserving of notice that these ancient slags contain sufficient lead, and very often silver also, to render the re-smelting of them a very profitable business, though *English coke* is employed for the purpose, and at a price greatly enhanced by freight and duties; and within the last seven or eight years considerable sums have been realised by this speculation. The extent to which this re-smelting of slags has been carried on upon this coast is enormous, and all the most valuable mounds of ancient scoria, some of which had become entirely buried beneath depositions of vegetable soil, and others had remained (though only at a shallow depth) below the present level of the waters of the Mediterranean, have been turned over, and again passed through the furnace with great profit to those who had intelligence to appreciate their value, and skill to turn it to account.

The history of ancient mining in Spain being thus intimately connected with its present state, I take the following brief notice on the subject from a Spanish work, *El Minero Espanol* por Nicasio Antonio Vallez:—"The history of the mineral wealth of Spain (says this author) ascends to the most remote antiquity, and even in the Sacred Volume mention is made of the abundance of gold and silver in our country. The Phœnicians and Charthaginians freighted their ships with these metals, and even formed their anchors of them; and the testimony of Aristotle and Diodorus Siculus, of Justinian and Posidonius, of Pliny and Strabo, justify the ancient belief that Pluto, the god of riches, had his abode in our country. The Emperor Vespasian obtained annually from Galicia, the Asturias, and Lusitani,* 60,000 lbs. of gold, as we are informed by Pliny, who extols the quantity of gold in these sites, particularly in the Asturias. The silver of Spain was found in such quantity that, according to the same author, Hannibal, in a mine worked by him near Cartagena, extracted daily a quantity which exceeds 30,000 reals† of our money. Cato delivered into the Treasury 25,000 lbs. of silver in bars, and 120,000 lbs. in money, besides 400 lbs. of gold, all of which he had accumulated in Spain. Helvetius, who was only governor of Andalusia, delivered 37,000 lbs. of silver in coin, and 40,000 lbs. of silver in bars."

"The Romans, and afterwards the Goths and Moors, worked in succession our metalliferous deposits; and in many of our mines are found at the present time coins of the above periods, inscriptions, and tools used in mining. The Romans formed the galleries of their mines round, and the Moors square; both, however, necessarily employed very imperfect processes, as mechanics were little advanced, and physics and chemistry were in their infancy. The use of the compass was unknown to guide the direction of the subterranean works, nor had gunpowder, that agent so powerful in the working of mines, been invented."

We have here a few of the facts brought together, which the classic authors have preserved, and, as I have before had occasion to observe, an enormous blank exists between ancient and modern mining in Spain. The long period during which the Spanish Peninsula was fiercely contested between the Gotho-Spaniards and the Moors was ill suited to this branch of industry, and the discovery of America was contemporaneous with the conquest of Granada, and the final expulsion of the latter from the Peninsula. This great discovery was fatal to the growth of mining, and, indeed, of every other branch of native industry. The vigour and enterprise of Spain, relieved from the pressure of internal war, soon found an ample scope in the vast and unexplored regions of the New World; and, although the accumulated hoards of the native princes at first satisfied the cupidity of the conquerors, yet as these became exhausted to enrich the Spanish Treasury, recourse was soon obliged to be had to the natural deposits of the precious metals themselves. Then commenced that brilliant career of Spanish mining in America, which for three centuries poured a continual stream of wealth into Spain, and through Spain into all Europe. Meanwhile home mining, with the exception of one faint effort to revive it during the reign of Philip II., sunk into complete abeyance: this effort was, however, rewarded by the discovery of the splendid mine of Guadalcanal, which, probably, produced the richest *single* bunch of silver ore ever discovered in Europe. In this state of abeyance mining industry remained till the reign of Ferdinand VII., father of the present queen, almost the only exception during this long period being the celebrated quicksilver mines of Almaden. These continued to be worked with little interruption, in order to afford a supply of mercury for exportation to America, to extract the silver from the ores by the amalgamation process. By a most fortunate coincidence, therefore, Spain was possessed in her American colonies of the richest deposits of the precious metals existing in the world, while, in her own soil, she had also the richest deposit of mercury yet discovered, and by the aid of which alone these metals could be extracted from their ores.

The brilliant career of Spanish mining in America was cut short in the beginning of the present century by the war of independence, which finally severed the colonies from the mother country, and, to a great extent, indeed, had the effect of ruining the mines themselves. The loss of the American colonies was a fatal blow to Spain, cutting off, as it did, what had long been the principal source of her wealth and power. This misfortune was quickly followed by another still greater—the invasion of the Spanish Peninsula by Napoleon's armies, the pillage of her cities, churches, convents, and palaces, accompanied by all the misery and devastation which it is well known followed in the train of the invaders during the long and memorable Peninsular war. When, therefore, Ferdinand was again placed on the throne of his ancestors, the wealth and splendour of Spain, *as she had been*, had well nigh departed, and in the universal wreck and poverty which the nation presented, it became of urgent necessity to re-open some of those sources of natural wealth with which the Peninsula is so largely gifted. Following, no doubt, the advice of able counsellors, Ferdinand determined, as one of these expedients, to stimulate and encourage mining industry; and the famous Royal Ordinance of 4th July, 1825, was the result. By this ordinance the former Royal monopoly of mines and minerals was abolished, and this branch of industry was thrown open, under certain regulations and restrictions, to the whole nation. This was one of the wisest and most beneficial measures which distinguished the reign of Ferdinand; and, notwithstanding the many difficulties which opposed the revival of mining industry, added to the long civil war which followed the death of that sovereign, the progress of Spanish mining in the 25 years which have elapsed since the publication of the above ordinance has been remarkable, her annual mineral produce now amounting to about *two millions* sterling per annum.

Murcia, Nov. 16. AN ENGLISH MINER.

* The ancient province of Lusitania nearly corresponds with the modern kingdom of Portugal.

† About 200*l.* sterling.

ON THE GEOLOGICAL AND MINERAL FEATURES OF CERTAIN DISTRICTS OF NORTH WALES.—No. V.

BY ST. PIERRE FOLEY.

From Hendreddu, through Cwm Ciprwith and Gilvach, along the Penant line, to the mountains east and north-east of the source of the Penant River, an immense mineral line of ore-bearing ground extends, forming, as it were, a segment of a zone, in average breadth about 500 fathoms, in which the chief part of the metallic deposits of this district seems to lie. This belt, though, as it were, cut out from superficial view, is found some two miles further to the east of north, and then proves its productive orey character for some miles on the same great bearing. Some important discoveries have been made, and one or two good paying mines have been opened within these limits, besides a few others now on trial, which are likely to succeed, if persevered in, and worked with that system and regard to economy so essential in every case of legitimate mining adventure.

The lodes and veins as yet discovered on and in this mining range are of every character, *continuous, bunchy, pipe, cross*, &c., and even *longitudinal bed-like*, as in the sulphur mines of Hendreddu and West Ciprwith, where beds of solid sulphuret of iron extend on a regular line of bearing for several fathoms, and then dwindle into small quartz string-like leaders, showing themselves here and there, even to the Penant mass of magnetic iron pyrites, a distance of two miles at least, but still on the same range. The *continuous* veins or lodes are chiefly copper sulphurets, mixed everywhere almost with iron pyrites. It seemed at first a question of doubt which of these ores would be found to prevail, so intimately were they blended, as it were, together; but on sinking at Cwm Ciprwith and under level at Gilvach, the iron sulphuret gradually diminished till, at present, there is not more than from 3 to 4 per cent. found in the well dressed ore, while *metallic* copper is from 9 to 12½ per cent.; and in the poorest ores dressed from these bottoms the average sulphurets are nearly in the proportion of 1 of iron to 2·75 of copper. These *continuous* lodes, as I call them, are traceable two or three miles by means of their chief indicator—quartz; sometimes forming long lines, *ridge-like*, confirmatory of their character; and, where they, the lodes, shoot through loose or decomposing rocks, throwing out rich gossany spumes of good promise. Like all other lodes, with very odd exceptions, their produce is variable, at one time poor, at another time very rich, then bunchy, producing vast quantities of ore, and now only a few specks of ore mixed with masses of quartz and elvan; again, leaders of solid ore from 6 in. to 4 ft. in width, and so on through all the varieties of poverty and splendour, so frequent even in the adventurous pursuits of men possessing on their introduction to their own *lode* of sterling and honourable bearing *material*, those indications which stamp their characters as persevering and indomitable under all difficulties, and who, although they may meet with unkindness, and stone-like obstructions, and ungrateful returns for labours of utility to others, still, with honour as their *compass*, nobility of intention their *line of bearing*, and laudable ambition their attaining *object*, there is no doubt but *such* lodes will well repay the adventurers that properly work them. There are two great lodes of this continuous description on Cwm Ciprwith, the more southernly of which has been worked on for some time under level at Gilvach.—*Tymyscorglod Slate Quarries, Carnarvon, Dec.* 19.

THE SOUTHAMPTON DOCK DIRECTORS have given orders for preparations to be made for another dock to be formed contiguous to the one now in use. The new dock about to be formed was partly excavated some years since, but its completion was delayed until an increase of business rendered it necessary. It will be appropriated to colliers and laid-up steamers.

SOUTH AUSTRALIAN COMPANY.—At a GENERAL MEETING of the proprietors, held at their offices, No. 4, New Broad-street, on Friday, the 27th December, 1850,

JAMES RUDDELL TODD, Esq., in the chair,

The following resolutions were unanimously carried:—

Moved by the Chairman, and seconded by the Rev. Thomas Timpson,—

1. That the report just read be adopted as a Supplementary Report of the affairs of the South Australian Company, and that it be printed and circulated under the direction of the Board.

Moved by John Bazley White, Esq., and seconded by Robert Oakes, Esq.,—

2. That the cordial thanks of the meeting be given to the Chairman and Directors, for their zealous and unremitting attention to the interests of the Company.

London, Dec. 27, 1850. ANDREW MILLER, Manager.

MEXICAN BONDHOLDERS.—At a GENERAL MEETING of the BONDHOLDERS of the FOREIGN DEBT OF MEXICO, at the London Tavern, on Monday, the 23d December, 1850, the following resolutions, proposed by the Committee, were passed:—

1. That the report of the Committee of Mexican Bondholders, bearing date 17th inst., be received.

2. That this meeting having duly considered the contents of the Decree of the Executive Government of the Republic of Mexico, promulgating an Act of Congress of that State, dated 14th October, 1850, and authenticated by the signatures of the Vice-President and Secretary of the Chamber of Deputies, the President and Secretary of the Senate, and countersigned by the President and Finance Ministers, having for its object a further compromise of the claims of the Foreign Bondholders of Mexico, and having also taken into account the statement made by the Government of the condition of the revenue in reference to these claims—

Resolved.—That although the terms proposed involve a great additional sacrifice of the interests of the Foreign Bondholders, yet, on maturely considering all the circumstances of the case, this meeting deems it expedient to accede to those terms, which are hereby agreed to; and the Committee are hereby authorised, as our representatives, and on our behalf, to make the necessary arrangements to complete the settlement on the conditions proposed in the said Decree.

3. That as this concession, thus unreservedly made by the Foreign Bondholders, added to their former sacrifices, amounts to about £23,000,000, the meeting entertains a sanguine hope that their generosity will be appreciated as it deserves by the Mexican Government and people, and that as a matter of bare justice in return, there being every probability of the finances of the country rapidly improving, the earliest opportunity will be embraced to obtain the sanction of the Legislature to a modification of the second article of the Decree, so as to confine the reduction of the rate of interest to a period of years, and not to enact it in perpetuity.

4. That, on the ground expressed in the foregoing resolution, the Bondholders expect that the Mexican Government will find the means of making some compensation for the great sacrifices thus made from out of the unappropriated lands of the Republic—such a mode of indemnity being obviously practicable, whether the said lands are placed at the disposal of the Central Legislature and Executive or of the several States of the Federation—all these lands being in justice and equity alike liable as security for the debt due to the foreign creditor.

5. That the arrangements made by Mr. Falconnet in Mexico, in relation to the cotton licenses, be approved and confirmed.

6. That the Committee be hereby authorised and urgently requested to make the most prompt arrangement practicable for the division of the money in hand, and of all future sums yet to be received, applicable to the payment of the arrears of dividends.

7. That the sincere thanks of this meeting be given to Lord Palmerston, as Foreign Secretary of State, for the support he has invariably given to the interests of the Bondholders.

N. A. NILSEN, Secretary.

Committee of Mexican Bondholders, London, 61, Moorgate-street.

GAS!—GAS!—GAS!—GUISE'S CONICAL SHADOWLESS GAS BURNER is SUPERSEDING EVERY OTHER BURNER of the day. It is now being generally ADOPTED in TOWN and COUNTRY, with very great advantage to consumers. The LIGHT is PURER and WHITER than that from any other burner. Though the gas flame is doubly deflected, a common straight chimney is employed to produce the draught, so that if broken it is easily replaced.

The CATOPTRIC REFLECTOR is a most important feature of this invention; both may be had of all respectable gas fitters, and at GUISE'S GAS BURNER MANUFACTORY, 45, CLERKENWELL-GREEN, LONDON.—None are genuine unless marked "Guise's Patent."

TESTIMONIAL.

I have tried several comparative experiments with Guise's Conical Shadowless Gas Burner, and I consider it to give a PURER and WHITER flame than I have yet seen produced by any other burner. ISHAM BAGGS.

MINING, RAILWAY, AND AUCTION OFFICES
52, *THREADNEEDLE-STREET, LONDON.*

Messrs. R. TREDINNICK & CO., in thanking their friends and the public for their patronage at the Sale of Mining and Railway Shares, on Wednesday last, hope, by strict attention to the interest of all parties, to receive a continuance of their support.

Owing to Christmas-day falling on Wednesday, the NEXT SALE will be HELD on WEDNESDAY, the 1st day of January, 1851, and continued weekly.

Messrs. TREDINNICK & CO. request that all ORDERS of SHARES FOR SALE be FORWARDED to them not later than MONDAY, the 30th inst., so as to allow their insertion in the catalogues, issued on the day preceding their sale.

STEAM TO INDIA AND CHINA, VIA EGYPT.—Regular MONTHLY MAIL (steam conveyance) for PASSENGERS and LIGHT GOODS to CEYLON, MADRAS, CALCUTTA, PENANG, SINGAPORE, and HONG-KONG.

THE PENINSULAR AND ORIENTAL STEAM NAVIGATION COMPANY BOOK PASSENGERS and RECEIVE GOODS and PARCELS for the ABOVE PORTS by their steamers—starting from Southampton on the 20th of every month; and from Suez on or about the 10th of the month.

BOMBAY.—Passengers for Bombay can proceed by this company's steamers of the 29th of the month, to Malta, thence to Alexandria by her Majesty's steamers, and from Suez by the Honourable East India Company's steamers.

MEDITERRANEAN.—MALTA—On the 20th and 29th of every month. CONSTANTINOPLE—On the 29th of the month. ALEXANDRIA—On the 20th of the month.

SPAIN AND PORTUGAL.—Vigo, Oporto, Lisbon, Cadiz, and Gibraltar, on the 7th 17th, and 27th of the month.

For plans of the vessels, rates of passage-money, and to secure passages and ship cargo apply at the company's offices, No. 122, Leadenhall-street, London; and Oriental-place, Southampton.

WILLIAM BROTHERTON AND CO., PATENT OIL MERCHANTS TO THE QUEEN,
the Honourable the Board of Admiralty, the principal Steam Navigation and Railway Companies, Engineers, and Manufacturers, in the United Kingdom,
HUNGERFORD WHARF, CHARING-CROSS, LONDON.

W. BROTHERTON & CO. take the present opportunity of again bringing before the notice of the public their PATENT MACHINE and LAMP OIL, and at the same time thanking their friends for the liberal support and patronage they have received during the past four years. Their best thanks are also tendered to those practical engineers, and scientific gentlemen, through whose kind communications, upon lubrication and frictional resistance, they have been enabled to bring their PATENT OIL to a state of chemical perfection not previously contemplated.

The important properties of W. B. & Co.'s oil are the peculiar softness of its body, its limpidity under all ordinary temperatures, and its unctuous nature. Being of a non-drying quality, it produces a complete separation of the parts when in motion—thus becoming itself the working body, and preventing friction; its chemical purity is such, that no oxidation takes place on the metals, or alloy forming the bearings; consequently those evils so perplexing to engineers, and so destructive in their tendency, are at once removed, and thereby the value of the oil more than saved.

W. BROTHERTON & CO. consider it unnecessary to publish any of the numerous and flattering testimonials they have received; but they will at all times feel happy in giving every information on the subject, and in receiving any communication likely to further the object they have in view.

In calling the attention of the public to their LAMP OIL, W. B. & Co. would merely state, that after the most severe tests, it is proved to be superior to all other patent oils for brilliancy, and that its durability causes a saving of at least 25 per cent. in the quantity consumed. *A liberal Commission allowed to competent Agents.*

WIRE ROPE.—The UNDERSIGNED having recently made extensive additions to their Machinery, respectfully solicit a TRIAL of their ROPES, which, in QUALITY of MATERIAL and PERFECTNESS of MANUFACTURE, cannot be surpassed. WILKINS & WEATHERLY.

Patent Wire Rope Works, 39, High-street, Wapping, London.

N.B.—The 3½ miles of wire rope in the Wapping Tunnel, at Liverpool, was supplied from this establishment.

EXHIBITION OF 1851.—T. P. AUSTIN, proprietor of PEELE'S COFFEE-HOUSE, FLEET-STREET, begs respectfully to inform his friends and the public generally, especially those interested in the forthcoming GREAT EXHIBITION, that he has recently NEARLY DOUBLED THE SIZE OF HIS ESTABLISHMENT, which will enable him to afford increased comfort and convenience to those honouring him with their patronage. The FILES OF NEWSPAPERS and PERIODICALS, for which Peele's Coffee-house is so celebrated, containing all the reports of the Royal Commissioners, will be available to those visiting this establishment.

*** The *Mining Journal*, in addition to all Publications connected with the Mining Interests, are regularly filed.—*Bed and Breakfast, 3s., or £1 per week.*

THE PATENT OFFICE AND DESIGNS REGISTRY,
No. 310, STRAND, LONDON.

INVENTORS will receive (gratis), on application, the OFFICIAL CIRCULAR OF INFORMATION, detailing the eligible course for PROTECTION of INVENTIONS and DESIGNS, with Reduced Scale of Fees.

Messrs. F. W. CAMPIN and CO. offer their services, and the benefit of many years experience, in SECURING PATENTS and REGISTRATIONS OF DESIGNS, with due regard to VALIDITY, economy, and dispatch—assisted by scientific men of repute.

Also, in MECHANICAL and ENGINEERING DRAWINGS, whether connected with Patents, Railways, or otherwise, by a staff of first-rate draftsmen.

Application personally, or by letter, to F. W. Campin and Co., No. 310, Strand (corner of Essex-street).

This day, in 8vo., with Five Engravings, price 3s. 6d.,

A TREATISE ON BRACING, with its APPLICATION to BRIDGES and OTHER STRUCTURES of WOOD and IRON.
By ROBERT HENRY BOW, Civil Engineer.
A. and C. Black, Edinburgh; John Weale, London.

Just published, in royal 8vo., cloth boards, price 18s.,

AN ELEMENTARY COURSE OF MATHEMATICS, PREPARED for the USE of the ROYAL MILITARY ACADEMY, by ORDER OF THE MASTER-GENERAL AND BOARD OF ORDNANCE—Vol. I.
Published for Her Majesty's Stationery Office, by John Weale, 59, High Holborn.

THE MINING ALMANACK, FOR 1851: under the immediate Sanction and Patronage of his Royal Highness PRINCE ALBERT, K.G., Lord Warden of the Stannaries, Chief Steward of the Duchy of Cornwall and Devon, &c. By HENRY ENGLISH, Editor of the "Mining Journal"—"Mining Review," &c.

The success attendant on the publication of the MINING ALMANACK, being the only Annual devoted to the Mining Interests, induces the Editor to announce the issue of the Third Volume early in the ensuing year, comprising, in addition to Original Papers, Statistical and Tabular Matter, interesting to the adventurer and useful to the practical miner, with a comprehensive compendium of information treating on the Industrial Exhibition of 1851, so as to afford to those who may visit the metropolis, whether from our mineral districts or foreign climes, a facility of acquiring knowledge on all subjects pertaining to Geology, Mineralogy, Metallurgy, and the Allied Sciences.

Communications are requested to be forwarded to the Editor, 25, Fleet street, London, to whom advertisements and subscribers' names may be addressed, or to the publishers.

A list of subscribers will accompany the work.

London: Simpkin, Marshall, and Co., Stationers'-hall-court.

THE ARCHITECT, incorporated with the CIVIL ENGINEER AND ARCHITECT'S JOURNAL.—Established in 1837—Published weekly, price 4d., or stamped 5d., and in monthly parts 1s. 6d.—for Civil, Mechanical, and Military Engineers, Architects, Builders, Surveyors, Patentees, and all scientific men. This Journal is illustrated with numerous plates and engravings from the best examples of public works, buildings, and machinery, at home and abroad, forming a complete Encyclopædia of Modern Engineering, Architecture, and Science. It reckons among its contributors and supporters the most eminent members of the profession in England, Scotland, and Ireland; and, as a work of reference and of current information, has been long received as an authority in the United Kingdom, America, and the continent of Europe. It also contains a record of all the principal Scientific Societies' proceedings.

The last Volume, for 1849, contains 22 plates and 238 wood engravings.—The Thirteen Volumes may be had, bound in cloth, £7. each.

To be had of Groombridge & Sons, Paternoster-row; Sutherland, Edinburgh; M'Phun, Glasgow; Robertson, Dublin; Mathais, Paris; Monier, Madrid; W. Campbell, Hamburgh; Muquardt, Brussels; Wiley, New York; and at the offices, No. 10, Finsbury-street, and No. 194, Strand.

IN COURSE OF MANUFACTURE.

THE VERMIN ANNIHILATOR.—This COMPOUND will be found most USEFUL in SHIPS, STORES, GRANARIES, FARMS, WAREHOUSES, and PRIVATE DWELLINGS. It will effectually, and with perfect safety in application, DESTROY BLACK BEETLES, COCKROACHES, BUGS, MICE, and even RATS: cats and dogs will not touch it.

It destroys by evaporation, causing no offensive smell from decayed animal matter, and consequently is the BEST SANITARY REMEDY for EXTERMINATING VERMIN.

The vermin will take it readily, and its effect is not only to destroy life, but to reduce them afterwards to mere powder—thus completely "annihilating."

It has been applied most successfully by several private families.

Price 1s. per box; a case, containing 13 boxes, will be sent carriage free to any part upon receipt of a Post-office order for 12s., payable at Charing-cross Post-office, to "Brayfield, Cumming, and Co.," Western Publicity Depôt, Princes-street, Leicester-square.

AGENTS WANTED.

COUGHS, ASTHMA, AND INCIPIENT CONSUMPTION are EFFECTUALLY CURED.—KEATINGS'S COUGH LOZENGES have been proved by long experience to be equally efficacious and powerful in those severer forms of pulmonic affections—asthma, incipient consumption, chronic bronchitis, and spasmodic cough—as in the milder, but often not less troublesome disorders of the throat and chest, winter cough, hoarseness, difficulty of breathing, and irritation of the throat, &c. Their entire freedom from all deleterious ingredients and opiates, whilst it renders Keating's Cough Lozenges a safe remedy for the most delicate female or youngest child, has caused them to be held in the highest esteem by public speakers, clergymen, and professional singers; but, perhaps, the high approval which is bestowed upon these lozenges by some of the most eminent of the faculty, is the best and most convincing guarantee for their safety, efficacy, and purity.—Prepared and sold in boxes, 1s. 1½d., and tins, 2s. 9d., 4s. 6d., and 10s. 6d. each, by Thomas Keating, Chemist, &c., No. 79, St. Paul's Churchyard, London. Sold retail by all druggists, and patent medicine vendors in the kingdom.

IMPORTANT TESTIMONIAL.

Church-street, Folkestone, *Nov.* 22d, 1848.

SIR,—Having been troubled with a very bad cough for the last eight months, I applied to Mr. Hammon, chemist of this town, for some relief; he recommended me your 'Cough Lozenges,' which I am happy to say cured me in a week. I beg most cordially to recommend them, and request you will not hesitate to make this letter public; such a valuable remedy cannot be too highly recommended. JOHN HILL, Bart.

London: Printed by RICHARD MIDDLETON, and published by HENRY ENGLISH (the proprietors), at their offices, No. 26, FLEET-STREET, where all communications are requested to be addressed. [*December* 28, 1850.